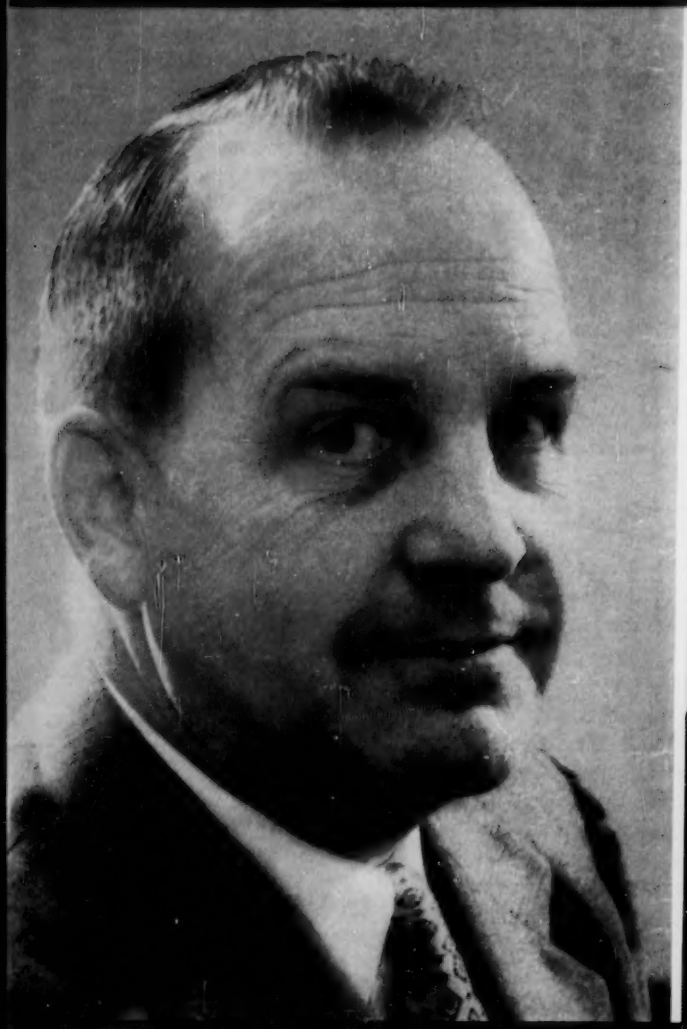
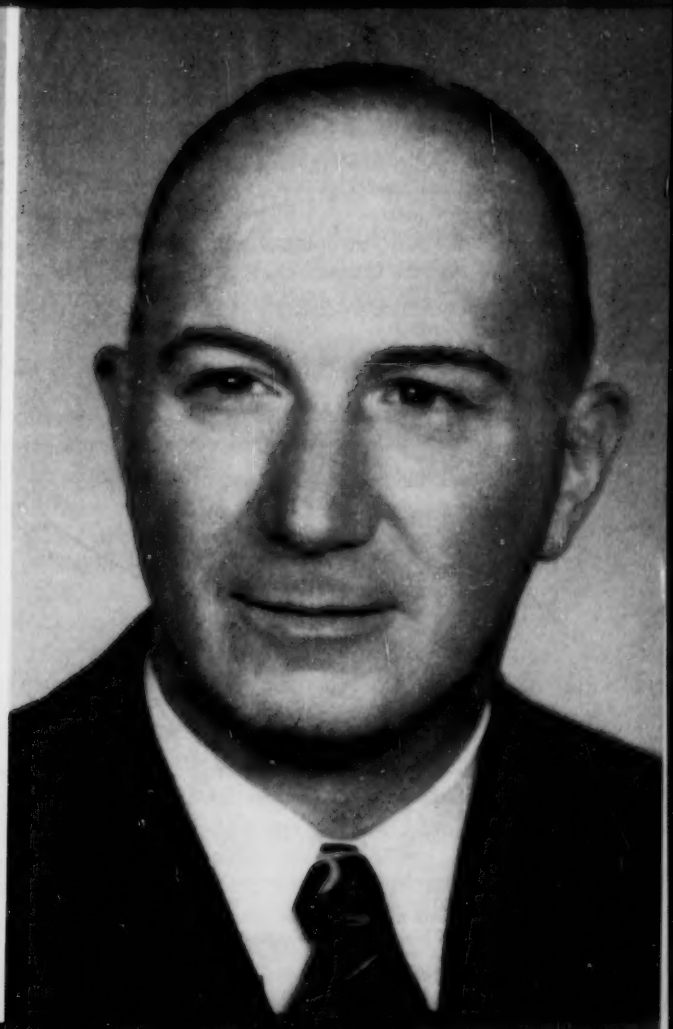
THE MAGAZINE OF

Standards





OFFICERS ELECTED

H. THOMAS HALLOWELL AND VAN H. LEICHLITER

JANUARY
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IN THIS ISSUE

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The Outlook for 1956—

THE MAGAZINE OF STANDARDS extends best wishes to its readers for better standards in 1956 and for greater prosperity and well-being for all.

As the second half of the Twentieth Century moves forward, the pattern of change becomes clearer. Standards are closely involved.

Some people contend that automation represents a revolution as far-reaching in its effects as the original industrial revolution; others believe that it merely represents a logical development of already existing methods. In either case, it is obvious that automation would be impossible without standards.

This is evident as the new techniques are reflected in stepped-up standards work in companies, in the government, in committees of associations and technical societies, and through the procedures of the American Standards Association. The electrical and electronics industries are, of course particularly affected. During 1955, 48 American Standards were approved by ASA in these fields alone. This activity is not confined to the USA. It is equally true in other countries. At the end of 1955, the International Electrotechnical Commission reports some 40 approved international recommendations. The New Year will see even more activity. Plans are already well under way for the IEC annual meeting and 146 half-day sessions (equivalent to 73 days) of technical committee meetings at Munich, Germany, June 27-July 6.

The Council of the International Organization for Standardization also has scheduled its 1956 meeting—July 16-21, Geneva, Switzerland.

In the nuclear energy field, the second outstanding field of change of the Twentieth Century, 1956 holds promise for an entirely new program of standards. The planning committee now being appointed by ASA (page 11) is being urged to act quickly. As the use of nu-

clear energy will bring about changes in production methods, use of materials, and products, many of which are not yet even visualized, a program of standards must feel its way in putting the results of research as they become available into useful specifications, tests, and safety codes. Will the new committee have cleared the decks for the start of a nationwide program of standards for industrial use of nuclear energy before the second half of 1956?

As ASA's new president and vice-president take office, plans are going forward for an active year. Management's increasing interest in standards is seen in the growing circulation of ASA's Newsletter. This interesting little publication, issued monthly, gives important news of standards in capsule form. Started as an experiment, it has now grown into a permanent informational service. Readers of THE MAGAZINE OF STANDARDS are invited to add their names to the Newsletter mailing list —at no charge.

Important Date

Enter this important standards date on your calendar—The Seventh National Conference on Standards, October 22, 23, 24, Hotel Roosevelt, New York.

The Front Cover

The new officers who will guide the development of the American Standards Association in 1956 — President H. Thomas Hallowell, Jr, president — Standard Pressed Steel Company, (left); and Vice-President Van H. Leichliter, vice-president — Operations, American Steel & Wire Division, United States Steel Corporation, (right). Mr Hallowell and Mr Leichliter took office January 1, 1956.

This Month's Standards Personality

Paul Arnold, chairman and a potent driving force of the Photographic Standards Board, ASA, is a widely known authority in horticulture as well as in his professional field, photography.

Mr Arnold has worked with Ansco Division of General Aniline and Film Corporation since his graduation from Whitman College (Walla Walla, Washington) in 1930. He is now Assistant to the Technical Director. Within five years he started his nationwide activities on standards as a member of the Sectional Committee on Motion Pictures, then known as Z22, now PH22. When work on standards for still photography was started in 1938, Mr Arnold was one of the first members of the Z38 sectional committee, and had a hand in the early work of the committee that expanded rapidly during the war years. So important was his personal contribution to this work that when Committee Z38 was reorganized into a full-fledged broad standards program with a Photographic Standards Board to coordinate the work of four (now five) sectional committees, Mr Arnold was elected chairman of the new Board. He was not allowed to retire to an ivory tower, however, but was kept close to committee activities as chairman of Sectional Committee PH1 on Characteristics of Photographic Films, Plates, and Papers. Some 270 approved and proposed American Standards are the result of the work of these photographic committees. They include standards of such broad interest as Exposure Indexes and diffuse transmission density which form the basis for the well-known "ASA" numbers marked on film packages and exposure meters.

Mr Arnold has taken a personal interest in the international phases of photographic standards which have brought world-wide recognition to the two basic standards already mentioned. In 1953 he was USA representative at an international meeting in Paris to study microfilm readers in connection with an ISO subcommittee on photographic reproduction of documents.

Mr Arnold's contributions to the photographic industry and to the science of photography were recognized when he was elected Fellow of the Society of Motion Picture and Television Engineers in 1948 and an Honorary Member of the Photographic Society of America in 1953. In 1955 he was awarded the Service Medal by the PSA. Since 1950 he has been editor of *Photographic Science and Technique*, the outstanding technical publication in the field of photography in the USA.

As a release from his regular duties, Mr Arnold cultivates his hobby, horticulture. He concentrates particularly on a family of tropical plants useful for growing indoors known as the Gesneriads. Even here he does not forget standards. He is a member of the Committee on Quality Standards of the Men's Garden Clubs of America and chairman of the Committee on Nomenclature and Registration of the American Gesneria Society. He is known as an authority on the history, taxonomy, and culture of the genus Achimenes, a flowering plant that is a relative of the African Violet. The list of societies of which he is a member is impressive, including the American Gesneria Society; American Horticultural Society; American Horticultural Council; American Gloxinia Society.

Mr Arnold is married and has a daughter. He lives in Binghamton, N. Y.

President-elect H. Thomas Hallowell (center) is here being welcomed by Vice Admiral G. F. Hussey, Jr, ASA's Managing Director, and Past President J. L. Cranwell, vice-president, Pennsylvania Railroad (right).

Hallowell and Leichliter Elected

A YOUNG MAN of 47 who for 10 years has put standards to work increasing profits for his company took office January 1 as president of the American Standards Association. He is H. Thomas Hallowell, Jr, president of Standard Pressed Steel Company, Jenkintown, Pa.

Van H. Leichliter, vice-president-operations, American Steel & Wire Division, United States Steel Corporation, will work with Mr Hallowell as vice-president of ASA.

Mr Hallowell is an industrialist who has pushed a campaign for acceptance of standard products rather than specials at all levels—in production, sales, distribution, and the consuming public. His company's products include socket screw products, aircraft parts, locknuts, and shop equipment. In his campaign on behalf of standards, he underscores lower costs, greater flexibility and safety, and faster delivery. He reports that the net worth of his company has jumped to $20,000,000, 16 times what it was 15 years ago. Sales now top $40,000,000 a year. The company has affiliates in Los Angeles, Canada, and England. The assets of the Cleveland Cap Screw Company, Cleveland, Ohio, were combined with those of SPS last November.

Mr Hallowell is economist, inventor, and world traveler as well as corporation head. In 1953 he received the Annual Industrial Relations Achievement Award of the National Metal Trades Association for outstanding employee relations. He holds patents on a machine he designed for the automatic assembly of primer heads for artillery shells, and for other pieces of equipment used in manufacture of locknuts and socket cap screws. Last Spring he played a key role with his engineers in bringing out the first successful titanium bolt for critical aircraft applications, and creating standards for it. He is also directing a program to obtain greater strength and fatigue life from steel fasteners.

Mr Hallowell was educated at Abington Friends School, the William Penn Charter School, and Swarthmore College. He has been with Standard Pressed Steel since graduating from Swarthmore. He became plant manager in 1943, vice-president and general manager in 1948, and president in 1951. He is a trustee of the Pennsylvania State University, a director of the Cincinnati Shaper Company, Cincinnati; the American Pulley Company, Philadelphia; the Jenkintown Bank & Trust Company and the Pennsylvania Manufacturers Association, and a director and vice-president of the Montgomery County Manufacturers Association.

On taking office, Mr. Hallowell commented, "We are in a new era of new technologies and new industries; diversification, mergers, and decentralizing executive command; high costs and squeezed profit margins; and great dependence of each industrial enterprise on its suppliers and sub-contractors. In this new era, we need as never before a common language among industry, science, insurance, labor, government, and the public. A comprehensive set of national standards for dimension, definition, performance, testing, and safety will provide that language." (Mr Hallowell's statement is given in full on page 16.)

Mr. Leichliter, born in 1906, started his career with American Steel & Wire in 1930 on graduation from Penn State. By October 1935, he had become district metallurgist in Cleveland, and was made assistant superintendent of the Newburg Works a year later. By 1944 he had been made division superintendent and in 1945 general superintendent. He was named assistant vice-president—operations, with headquarters at the Division's general offices in Cleveland, in 1950.

Mr Leichliter is a member of the American Iron and Steel Institute, and belongs to the American Society for Metals, the Wire Association, American Ordnance Association, Cleveland Chamber of Commerce, and the Association of Iron and Steel Engineers.

The Legal Implications of Standardization

presentation by

Ephraim Jacobs

One of the outstanding features of the Sixth National Conference on Standards was a session on the Legal Implications of Standardization. Ephraim Jacobs who has been chief of the Legislation and Clearance Section of the Justice Department's Antitrust Division since October 1952 presented the viewpoint of the Justice Department. Mr Jacobs has been with the Antitrust Division since 1944. The views he expressed are of great importance to all concerned with standardization. His present assignment involves consultation with business concerns and groups including trade associations who may wish to obtain an advance indication of the views of the Antitrust Division with respect to a contemplated program. Many of these programs on which views are sought include standardization activities.

ABOUT 15 years ago the Justice Department filed a case against the Southern Pine Association. Shortly thereafter, a New York newspaper commented that trade association officials had become apprehensive about their standardization programs, because the prosecution of the Southern Pine Association had raised questions concerning the legality of those programs. Assistant Attorney General Arnold sent a letter to the newspaper to correct what he considered to be a misleading interpretation of the action taken by the Justice Department. He pointed out that the Department in that action was prosecuting a conspiracy and that the standardization program referred to in the case was used by the association to eliminate competition and to aid in blacklisting competing companies who were not parties to the program. He also pointed out that under the consent decree entered in that case standardization programs were permitted if they did not operate illegally to restrain interstate trade and commerce. His letter concluded, "Thus it will be seen that standardization programs in and of themselves are not condemned by the Department. It is the wrongful use to which such programs have been put that has been questioned."

Government Policy Toward Standardization Programs

This statement, in my opinion, reflects present-day thinking on this subject. I am not familiar with any case started either by the Department of Justice or the Federal Trade Commission which challenges the legality under the antitrust laws of a standardization program as such. In fact, there has been judicial recognition of the potential benefits of these programs in several court decisions. The Supreme Court in the famous *Maple Flooring* case pointed out that the defendants had engaged in many activities, such as standardization and improvement of the product, to which no exception had been taken by the government and which were admittedly beneficial to the industry and to consumers. Another court commented that standardization could be to the advantage of all concerned, including the consumer who, among other benefits, is thereby enabled to know what he is buying and to make intelligent price comparisons.

Antitrust Implications

If the Justice Department, the Federal Trade Commission, and the courts have recognized that there is nothing inherently illegal in standardization programs, and that they can be actually beneficial, why then should there be so much concern over the antitrust implications of these programs? Unfortunately, some companies and some trade associations, a minority, of course, have abused the programs. They have used them for the purpose or with the effect of eliminating competition. They are occasionally allied with schemes to promote price fixing and production control, and to exclude competitors from a market. Group activity toward these ends raises basic and classic antitrust problems.

Why have standardization programs been so abused? What are the characteristics of standardization which, in an antitrust context, aid this misuse? I think these characteristics are threefold. First, standardization generally involves group or collective action. As you know, collective action toward an objective is frequently illegal, whereas individual and unilateral action toward the same objective might be entirely legal. This is highlighted by the language of Section I of the Sherman Act which declares illegal all contracts, combinations, and conspiracies in restraint of trade. This language contemplates more than mere individual action. One manufacturer, acting independently, may decide for valid business reasons, and without fear of antitrust complications, to standardize his line or to stop producing other items. When he does this as the result of group decision, however, antitrust considerations arise.

A second characteristic that facilitates abuse is the uniformity of product which results from standardization. This provides a common denominator for agreements to fix prices or to participate in other illegal action. Courts have recognized this, and have pointed out that it is easier to reach the goal of uniform prices on a standard product than on one which is not. One court has even said that where there is a standardized product there is a tendency toward uniformity of price. I believe there is justification for being concerned over the competitive impact of product standardization when there are present also uniform prices, standard discounts, and other identical practices, followed by a large part of an industry. In such a context, standardization of product might well be, and in fact has been, cited as one of the "plus factors" leading to a conclusion that price fixing existed in an industry. This suggests a very simple precaution. Where you have a standard product, every effort should be made to avoid all other indicia of agreement. As one court put it, the standard product should "be permitted to enter the channels of commerce unfettered by any restrictions which might impair such competition as otherwise exists."

In evaluating the weight to be given the element of standardization when it is a part of a broader program of uniformity, a distinction might be made between a product standardized by nature (salt, sugar, oil) and one standardized by agreement. A standardized product which is so by nature may be considered less significant in a uniform price context than would a product which has been standardized by meticulous effort and urging of the parties involved. The latter might be considered "artificial" standardization, deliberately achieved to aid in the price-fixing program.

This idea received judicial recognition in a Federal Trade Commission case involving milk and ice cream cans. There it was contended that since the cans were standardized, uniformity of price was a natural result. The court said this argument might have merit as to certain products which are standard by nature. But, said the court, a can is not in that category. Here there was a continuing effort and urging by the parties to have the cans manufactured in uniform classifications. The court believed that the meticulous effort to standardize the products was significant, in the context of uniform prices.

A third hazardous characteristic of standardization programs, antitrustwise, is that they resemble, and sometimes directly involve, agreements to refrain from producing nonstandard products. And, of course, generally speaking, agreements to limit production are not permitted under the antitrust laws. The question of whether or not an agreement to adopt a standard violates the law is not an easy one to resolve. But if you couple with such an agreement an additional undertaking to discontinue the manufacture of nonstandard products, the answer is easier. The latter definitely should be avoided.

But a mere agreement to adopt a standard, without the additional undertaking, may also create problems, depending upon the purpose, effect, and the character of the standardization. Admittedly, adopting a standard for a size 15 shirt would have no grave competitive consequences. But consider the competitive significance of adopting a standard for the number of paper towels in a roll, or the length of a fold of crepe paper. Adopting a standard size for light bulb sockets is one thing; but standardizing on the number of hours a bulb will burn has entirely different competitive implications. It is fairly easy to see what objective is sought in the case of the size 15 shirt or the uniform socket. But the same explanation does not fit in the case of the paper towels or the life of the bulb. It is in situations similar to the latter where, in my opinion, an agreement to adopt a standard raises serious antitrust hazards. You may recall the standardization program involved in the pencil case brought by the Federal Trade Commission several years ago. It was found there that the program had as its objective, among others, a limitation on the quality of pencils offered for sale. Here, again, it is impossible to explain and justify this program as we might do with respect to the size 15 shirt.

Evaluating Standardization Agreements

In evaluating agreements to adopt a standard, we must also consider the scope of the standardization involved. In one case, the defendants sought to rebut any inference of combined action by pointing out that they were required to meet the standards set up by the Underwriters' Laboratories, and that they were required to make certain sizes in order to obtain certain ratings. The Court said:

> This evidence may well explain the artificial standardization in regard to size. But we can well understand why the trial judge was unable to accept Mr. A's testimony as a satisfactory explanation for the similarity in color and other physical characteristics among the extinguishers manufactured by the different corporate defendants. Appellants make no effort to explain why these products, although manufactured by different companies, and formed of components manufactured by different companies, were indistinguishable save for their respective labels.

It is very important that each

participant retain his individual freedom to depart from the standard as he individually desires. This, to a small extent, negatives the idea that there is an intention to limit the production of other products. You may recall that the Commercial Standard Acceptance Form used by the Commerce Department includes the statement: "We reserve the right to depart from it [the standard] as we deem advisable."

Needless to say, there should be no threatened or exerted compulsion to enforce adherence to a standard. This would be entirely inconsistent with the voluntary nature of most standardization programs.

I have mentioned that standardization may facilitate price fixing and may involve a limitation on the production of nonstandard products. There have also been programs which the Justice Department believed were used to exclude competitors from a market. An aggravated instance is recounted in an old indictment involving flexible metal hose and tubing. This indictment, I hasten to add, was about 13 years ago. Since it describes so many things that should not be done, I think it is best if I read directly from the indictment. First, it alleged a combination and conspiracy among an institute and certain of its members to regulate, allocate, and divide the market for flexible metal hose and tubing among the defendant corporations, and to exclude from the market manufacturers of hose and tubing who were not members of the institute. It was alleged that within the institute there was a so-called standardization committee, ostensibly to standardize and make uniform the products of the industry, but actually to give sanction to the allocation of markets among the defendant corporations, and to exclude from the market nonmembers of the institute. The indictment continued as follows:

(a) The defendants agreed to instruct and direct and did so instruct and direct the Standardization Committee to hold itself forth as the representative of 85 to 90 percent of the flexible metal hose and tubing industry and to communicate such representation among individual consumers, industrial consumers, and governmental purchasing agencies, while actually and in fact the Institute and such Committee represented approximately 60 percent of the flexible metal hose and tubing industry.

(b) The defendants agreed to instruct and direct and did instruct and direct the Standardization Committee to prepare and submit to individual consumers, industrial consumers, and the Government of the United States recommendations and specifications for particular types of flexible metal hose and tubing suitable for specific uses and attempted to and did induce such individual consumers, industrial consumers, and agencies and bureaus of the Government of the United States to accept such recommendations and specifications.

(c) The recommendations and specifications so offered and prepared by such Committee were descriptive only of the flexible metal hose and tubing manufactured by defendant corporations to the exclusion of the flexible metal hose and tubing manufactured by nonmembers of the defendant Institute.

(d) As a means of regulating, dividing, and allocating the market for flexible metal hose and tubing among the defendant corporations, agreements, understandings, or arrangements were entered into by the defendants pursuant to which the Standardization Committee was directed to recommend and prepare specifications for only one type of flexible metal hose and tubing for a specific use or purpose regardless of the suitability of other types of flexible metal hose and tubing for the same use.

(e) The defendant corporations entered into an agreement or understanding or were ordered by the defendant Institute to refuse to make individual recommendations concerning the suitability of flexible metal hose and tubing for specific uses, such recommendations to be made only by the Standardization Committee.

(f) The defendant corporations thereby represented that the Standardization Committee was a free and impartial body when in fact such Committee was dominated and controlled by the defendant corporations. The Standardization Committee was required by the defendant corporations to submit its recommendations to the defendant corporations for suggestions and objections before making any recommendation. The Standardization Committee was permitted only to make such recommendations as were descriptive only of the flexible metal hose and tubing manufactured by defendant corporations to the exclusion of that manufactured by nonmembers of the defendant Institute.

(g) The defendants failed or refused to give notice to manufacturers who were nonmembers of the defendant Institute of the activities and recommendations and proposed specifications prepared by the Standardization Committee.

(h) The defendants agreed and conspired to use the Standardization Committee as a means of forcing nonmembers to join the Institute, or as an alternative that such nonmembers would be excluded from the flexible metal hose and tubing market.

I might say that this case was never tried. Most of the parties entered pleas of no contest and were fined a total of $30,500.

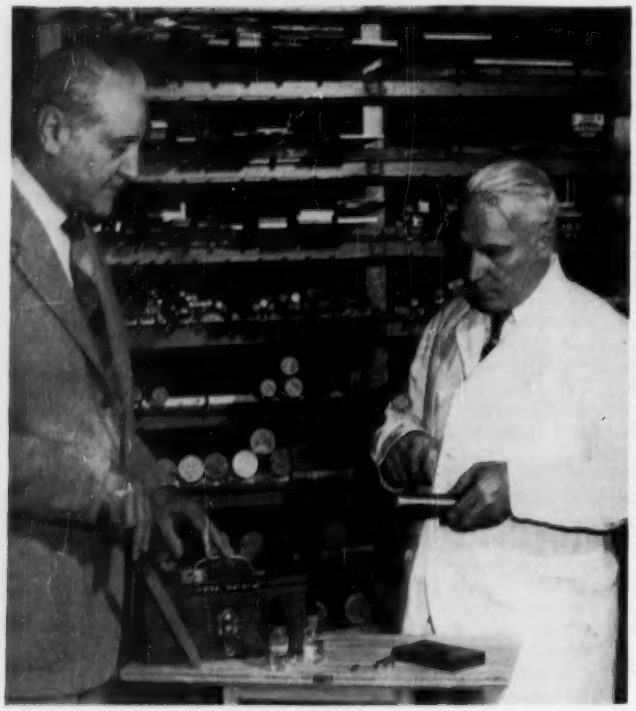
Consequences of an Illegal Standardization Program

What are the consequences of an illegal standardization program, or of one that is an element of an illegal scheme? The answer may depend upon whether you are pursued by the Federal Trade Commission, or by the Justice Department, or whether you are sued by a private party who has been aggrieved. The Federal Trade Commission can proceed administratively and obtain a cease and desist order against the continuation of certain practices, which order may be appealed to the courts. The Justice Department, on the other hand, can proceed either civilly, to prevent and restrain further violations of law, or it can present evidence to a grand jury. I think it is safe to say that the Department of Justice will seek an indictment only in aggravated cases; the flexible hose and tubing case, for example. And price fixing is nearly always considered aggravated. But on the whole, I believe illegal standardization programs have been the subject of more civil than criminal proceedings.

This brings up the question of what action is generally taken against such programs. You will recall they are nearly always attacked as part of a broader illegal program. In such circumstances, a court may, if it wishes, completely strike down the standardization program, even if that program is in itself legal. It is considered within the power of a court to enjoin acts which are legal when standing alone, but which are used to further an illegal program. As a matter of fact, however, this has not generally been done. In most cases the Federal Trade Commission and the Justice Department have permitted an otherwise legal standardization program to continue, so long as it is not used with

(*continued on page* 26)

The Use of Standards in a Chemical Plant



Ansco tests samples of standardized materials as received. Discussing a steel sample are H. A. Burns, left, Manager of Production Engineering; and Julian C. Potts, Standards Engineer. As shown in the accompanying article by Mr Burns, chemical as well as physical standards for steels have great importance in chemical plants such as the Ansco Film Plant.

by H. A. Burns

Mr Burns is Manager of the Production Engineering Department of Ansco, a Division of General Aniline & Film Corporation. This paper, originally entitled *The Use of Standards in the Maintenance and Construction Departments of a Chemical Plant*, was presented at the Fourth Annual National Convention of the Standards Engineers Society, Hartford, Connecticut, September 29, 1955.

ANSCO, a Division of General Aniline & Film Corporation, manufactures a complete line of photographic film, paper, chemicals, cameras, and accessories. The Plant falls under the general classification of a large light chemical plant having about 4,000 employees.

First, an outline of the duties and functions of the Engineering Department at Ansco, which are in general similar to those of most chemical plants, will clarify the discussion of standards. These functions are as follows:

1. Provide and maintain the energies required for the operation of the Plant, including the generation of steam and about 90 percent of the Plant's electric power, providing well, distilled, hot, and cold water, refrigeration, air conditioning, inert gas, etc.

2. Maintain the present equipment and buildings in good condition.

3. Provide new buildings and equipment or alter present facilities to meet production requirements.

4. Maintain an adequate stock of maintenance and construction materials. Ansco maintains a Mechanical Stores stock valued at about $90,000, having over 6800 items set up on Cardineer cards, each with established maximums and minimums. This stock is turned over about twice a year.

You will note that these duties and functions vary widely from the functions of a Product Engineering Department in a metal-working industry. The Engineering Department at Ansco does not design or specify the product; and the standards which will be discussed here, in general, do not cover any material which goes into the product, that is, chemicals, packages, spools, foil wrapping, camera parts, etc. These are manufactured according to standards established by the Product Standards Department.

The Engineering Department of Ansco does practically all the maintenance, with its own staff, letting out on contract large painting jobs, road repairs, and some major overhaul of production equipment such as punch presses at the Camera Plant. Also the Engineering Department designs, fabricates, and builds a large part of the film and paper-sensitizing and processing equipment, as this equipment is not commercially available. We also do most of our own building design, including air conditioning, elevators, and other building equipment. As our buildings are functional with our product, we have found it advisable to do our own building design, supplementing our designers with hired men as needed.

To do the large amount of designing, fabrication, construction, and maintenance work we have about 360 employees in the Engineering Department. The personnel of this department includes Engineering Supervision, engineers, designers,

Standardization of many parts saves large sums in the construction and operation of large, complicated machines such as this filmbase casting machine, a portion of which is shown in Ansco's Binghamton, New York, Film Plant. These machines operate 24 hours a day, 7 days a week, producing many different kinds of base material for Ansco's products. The Engineering Department builds much of Ansco's equipment.

draftsmen, development and instrumentation groups, mechanical stores, shops, energies, janitors, and elevator operators.

Photographic film and paper, in addition to being sensitive to light, is sensitive to many fumes and materials. To illustrate this, when one of our Film Coating Machines was constructed during World War II, we encountered many difficulties in obtaining the large number of types and sizes of materials required, so several "off-the-cuff" decisions were made on substitutions in an effort to get the job done. For example, our standard for plug cocks in the emulsion lines called for Type 316 stainless steel bodies and hardened Type 420 stainless steel plugs. At that time Type 420, in the size required for the plugs, was on very long delivery, so Type 440 was substituted. In general, the higher the chrome content of stainless steel, the more resistant it is to the mixture of chemicals used in our emulsions. So it seemed like a proper decision at that time and not too much thought was given to it. Upon the completion of the machine many months later the level of fog on the film produced was much higher than on the other coating machines. After considerable searching and exploding many theories, it was noted that the plugs of the plug cocks showed signs of corrosion. A quick check was made and it was found that the corrosion products from the plugs were causing the high fog on film produced on this machine.

To be sure that all materials that go into the production areas are safe, samples are checked by our Raw Material Quality Control Department. This covers such materials as paints, detergents, floor covering, new types of insulation, etc. Many brands of these products give off fumes that would adversely affect the product although it may not come directly in contact with it. Also these items must be rechecked from time to time as the manufacturers change formulations without notice. Paint manufacturers are very prone to do this.

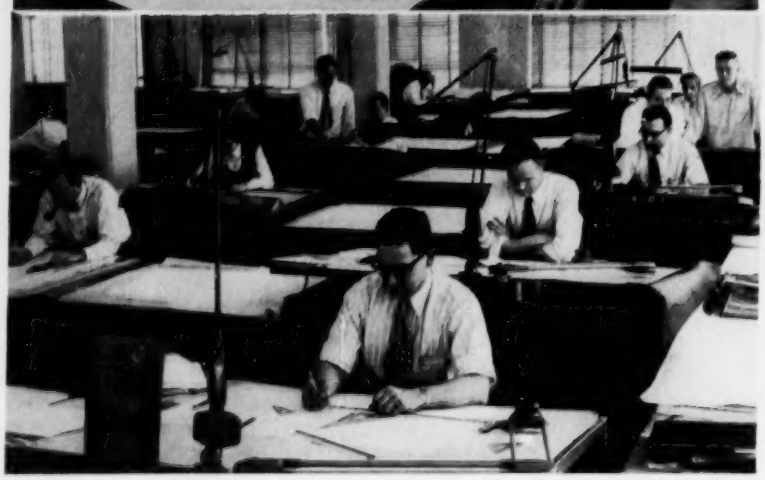
All this may seem rather far afield from the subject of standards but many of the standards at Ansco must take into account the effect the materials will have on its very sensitive product. On the other hand, a large part of our standards could be used by any Plant Engineering Department in building and maintaining the usual chemical plant.

To operate and maintain a plant of the size of ours with any degree of efficiency, we must have standards and consistently adhere to them.

There seems to be no end of the things which should be in our Standards Book rather than depend upon the memories of Engineers and Designers. These books and drawings are used by the Drafting Room and Shop. You can go too far, however, in referring to standards on drawings; for instance, stating that all piping shown on the drawing is in accord with Standard 203-A-1. We have found that it is necessary to copy some of the information contained in the standards onto many drawings, as the pipe-fitters or mechanics do not have the Standards Book with them out on the job, but do have the drawings.

When a standard is to be added to the book or a major revision is to be made, the proposed new standard or change is tentatively made up and sent to the interested persons for review. Three or four days later a conference is called. These conferences usually include the Chief Engineer, Plant Engineer, the Design Group Leader, and Area Engineers who are particularly interested in the item under discussion. Also, the Shop and Craft Foremen who are working with these materials day in and day out are very important members of the conferences. Quite often the actual field experience with the item, as observed by the foremen, is the deciding factor as to which product will be selected as standard.

We have found the conference method to be the quickest and best way to establish a standard. The



Standardized valves, important cost-saving step in chemical plants, are agreed on at conference in Ansco's Engineering Department. Standards Engineer J. C. Potts is shown pointing out a valve feature to key officials. Left to right: A. F. Schmidt, Manager, Energies and Electrical Engineering Department; H. A. Burns, Manager, Production Engineering; Mr Potts; R. J. Berstler, Shop Superintendent; W. A. Robinson, Supervising Engineer, Equipment Design Department; and J. A. Ries, Foreman, Pipefitting Shop.

Corner of main drafting room at Binghamton. More than 360 employees in Engineering Department use standardized materials and procedures to provide and maintain buildings and machinery for manufacture of photographic materials.

man preparing the standard leads the conference, explaining the need and reasons for the various selections. He usually has samples from suppliers to display. Previously when we depended upon written replies, either we did not get the replies or the man in charge of the standards was called into the office of each member of supervision to explain the reason and need for the standards or the change. This was very wasteful of the Standards man's time, and we usually wound up in a conference before we could explain all the details to the various interested persons and obtain their approvals.

Our standard for valves provides a first and second choice. We spent considerable time on this standard, as valves represent a large expenditure of dollars over the years, both from the first cost and the maintenance cost. We obtained quotations on comparable valves and a cost comparison was made. Using this cost comparison and evaluating our actual field experience with the different makes of valves, the selections were made. This standard was established many years ago and it was revised again last year. We found that we were buying unnecessarily high-priced valves for many uses, as there were many cheaper valves on the market which would give satisfactory service and were stocked locally. Another similar investigation was made on pipe unions. Again we changed manufacturers due to cost comparisons. The savings on the purchase price alone more than paid for the time of the man who is working on this Standards Book. These cost comparisons should be made at regular intervals to be sure that we are getting the most value for our money.

A word of caution—it is impractical to change suppliers each time one of them announces a price change. This would defeat the whole idea of having standards. For instance, valves manufactured by various companies have different face-to-face dimensions, which make replacement with different manufacturers' valves very expensive. Also, the more makes of valves which we have installed, the larger amount of money we must tie up in repair parts.

As an adjunct to our Standards Book we have a Stock Book which lists items carried in Mechanical Stores. This book is used by the designers so that they will select stock sizes rather than specify odd sizes not stocked. This is as important when building one of a kind as when building several units.

A competent engineer spends a good share of his time adding to and keeping the Standards Book up to date. The remainder of his time is spent on a similar type of work. There is no short cut to setting up standards for a Maintenance and Construction Engineering Department. The only way to establish and maintain standards is to pick a top-flight engineer who is familiar with the various phases of construction and maintenance, assign him to this job, and leave him on it. Setting up standards and keeping them up to date cannot be done economically or efficiently as a "fill-in" job.

What Standards Are Needed For Nuclear Energy?

ASA planning committee to study industry problems

AS industry approaches a broader use of nuclear energy, it is taking steps to foresee and provide answers to the problems that the new techniques and materials will cause. Recognizing that the development of standards puts into usable technical form the scientific knowledge developed through research, a conference of 175 representatives of industry and government has asked the American Standards Association to study and plan a standardization program in the field of nuclear energy. The conference met in Washington, December 8. As a result of its request, the Association is naming a planning committee of experts to study and make recommendations to industry on the need for standards for nuclear energy processes.

"This step was taken by industry in recognition of an urgent need for one national set of voluntary standards usable by every industry in its newly-acquired use of fissionable material," said Arthur S. Johnson, vice- president, American Mutual Liability Insurance Company of Boston. Mr Johnson, who is chairman of ASA's Standards Council, was chairman of the conference.

Those concerned believe that standards will be needed to provide safety requirements for protection of personnel, procedures for waste disposal, specifications for reactor components and fuels, and standards in the field of chemistry, metallurgy, metallography, and fabrication of reprocessed fuels. John R. Townsend, Sandia Corporation, commented that there are three aspects to the problem—that of safety to people and safety of handling; the effect of radiation on environment and materials; and the effect of radiation on things or equipment.

ORGANIZATIONS INVITED TO APPOINT REPRESENTATIVES ON THE PLANNING COMMITTEE ON STANDARDIZATION IN THE FIELD OF NUCLEAR ENERGY

American Industrial Hygiene Association
American Institute of Chemical Engineers
American Institute of Electrical Engineers
American Society of Mechanical Engineers
American Society of Safety Engineers
American Society for Testing Materials
Association of Casualty and Surety Companies
Atomic Energy Commission
Atomic Industrial Forum
Bureau of Explosives
Conference of State and Provincial Health Officials
Department of Defense
Edison Electric Institute
Institute of Radio Engineers
International Association of Governmental Labor Officials
Manufacturing Chemists Association
National Association of Mutual Casualty Companies
National Bureau of Standards
National Electrical Manufacturers Asociation
National Safety Council
Radio-Electronics-Television Manufacturers Association
U. S. Department of Labor
U. S. Public Health Service

Present standards do not adequately cover the applications which will be needed in nuclear energy, said Harvey A. Wagner, speaking for the American Society of Mechanical Engineers. As an example, he called attention to the fact that certain fluids involved in operations of nuclear power installations are not covered in the American Standard Code for Pressure Piping. The Atomic Power Development Associates have already been handicapped in their work on design because of a lack of adequate standards and specifications, Mr Wagner declared.

A number of organizations are taking steps to meet the problem in their individual fields. On materials, the American Society for Testing Materials has authorized existing ASTM technical committees to develop test methods and specifications of interest in nuclear energy applications. In addition, the ASTM Board of Directors decided late in 1955 to establish a committee on the management level to serve in an advisory capacity. It is planned that this committee will concern itself with promoting standardization work in the nuclear energy area within ASTM technical committees. It will also coordinate nuclear energy matters within the Society and with other outside organizations. Members of this committee, it is planned, will be individuals concerned with use, in the design area, of engineering data on materials. It will not be a standards-making committee.

The American Society of Mechanical Engineers has had a committee on nuclear energy applications since 1946. This committee was disbanded recently and a professional division of ASME was

(*continued on page* 22)

The Mill That Ran Itself

AUTOMATION has many definitions. One authority calls it "using machines to run other machines." Another terms it "continuous automatic production." A third says it is the technique of making a manufacturing process fully automatic by moving parts in and out of machines without handling by human operators. D. S. Harder of the Ford Motor Company, who popularized the word, declares it is "a philosophy of manufacturing."

The first appearance of automation came in Maryland at the end of the 18th century. A young storekeeper, millwright, and inventor named Oliver Evans (1755-1819) built a grist mill which took grain at a farmer's wagon, sifted, cleaned and ground it, and loaded it again as flour at the wagon—all without human intervention. It was the first plant in history which took a raw material and mechanically manufactured it into a finished product in an uninterrupted automatic sequence.

Before Evans' invention the only parts of a mill worked by power were the grinding stones. Evans applied power from a single shaft driven by wind or water to five machines. They were: (1) an endless-chain belt of wooden buckets which elevated the grain from the wagon to the top of the building at the rate of 300 bushels an hour; (2) a revolving 12-foot rake which stirred the grain and guided it to a central gravity chute; (3) a belt of rakes which moved the grain further along a chute; (4) an Archimedes screw which conveyed it to the millstones—the first use of a screw to move solids rather than to raise water; (5) and a belt mounted on rollers which carried the flour to barrels, sacks, or loading place—all untouched by human hands. None of these machines were new in conception, but their combination and application were unique. They cut labor at the ordinary grist mill from four sweaty laborers to two machine supervisors.

The growing technology of automation, which seems destined to dominate the industrial processes of the second half of this century, is far more dependent than normal manufacturing on the older arts of standardization. Standards enter into every operation and phase of automation. The machines of automation cannot screw a nut on a bolt, even electronically, if the dimensions do not match. They cannot mill a T-slot if the tool does not fit the holder. Feeding a formula into a machine by tape is impossible if the tape does not fit, and it is useless if the machined part does not match the part it replaces.

Standards experts agree that the art of automation is still too new for a comprehensive set of standards, but they hold firmly to the belief that certain basic standards could and should be written today. Among these are standard work heights of the machines; standard bases, beds, and columns; standard drive shafts; and perhaps other component parts basic to most of the machines of automation. They feel further that valuable standards work can be done in standardizing terms, since in the field of automatic control the same nomenclature and symbols mean different things to engineers in hydraulic, pneumatic, and electrical engineering—and even to engineers working in the same fields.

These experts believe that such advance standardization now would save endless complication and waste as the technology spreads.

This first important step of standardizing nomenclature has already begun. It is being carried on by a committee formed and operating under the auspices of the American Standards Association, under the administrative leadership of The American Society of Mechanical Engineers. Committee C85 is working to standardize "terminology pertaining to automatic process control, feedback control, and regulating and related systems not requiring human intervention." Some 35 representatives of 23 organizations are participating in the work.

Changes based on experience in

Revised Instrument Standards

The American Standard for Electrical Indicating Instruments was an outstanding achievement in 1951 when it was first approved and published by ASA. It has been widely used by users of instruments as the basis for purchase specifications. The standard analyzes the requirements for manufacture, performance, and installation of the electrical indicating instruments in general commercial use in order to keep instrument results comparable.

In this article, the chairman of the committee responsible for the standard tells what the committee found when it undertook to revise the 1951 edition.

by JOHN H. MILLER
Vice-President, Weston Electrical Instrument Corporation

THE Electrical Indicating Instrument Standard, C39.1-1951, has been reviewed by the Working Committee which produced it. It was believed that any standard of this length, 32 pages, would require some revision after a period of five years.

We were fortunate in having the attendance of nearly every one of the original Working Committee. Comments which had been accumulated over the intervening years were presented by the staff of the American Standards Association. Much to the surprise of the committee the comments were very limited and none of them were of a critical or important nature.

Some difficulty was reported in obtaining good values of the so-called "position influence" in the case of the more accurate instruments, where this influence is actually a very small amount. For example, portable instruments having a rated accuracy of 0.25 percent are to have their normal horizontal position changed by a 1 degree angle of tilt at which point the additional error found, due to this tilt, shall be less than 1/5 of the rated accuracy, or 0.05 percent. But it is extremely difficult to read such a small error, and, indeed, it would be difficult to tilt the instrument accurately to the degree specified. Further, a slight amount of freedom in the jewel bearings might sometimes also cause a minor error of about the same amount.

Delicate adjustments, shown here being made on d-c instrument, assure that electrical panel and switchboard instruments meet requirements of American Standard C39.1-1955.

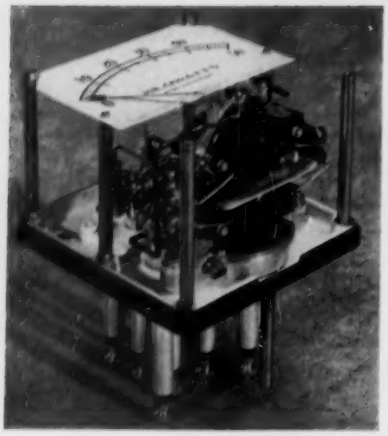
Weston Elec Mfg Corp

Consequently, to eliminate the effect of freedom of the bearings and to make the measurement of the effect somewhat simpler, a note has been added to the section on "position influence" reading as follows:

> "NOTE: When the angle of test cited in the detailed requirements sheets is less than 6 degrees, the result may be obtained by tilting the instrument 5 times the specified value, and dividing the change found by 5."

It is believed that through this procedure a more exact method of rating the "position influence" can be obtained.

SOLDERING TERMINALS. In recent years with the wider use of indicating instruments on electronic gear of all types and with the very common use of soldering terminals on other components in such gear, many manufacturers of instruments



Weston Elec Instrument Corp

Interior view of a polyphase wattmeter of the six-inch rectangular type.

Instrument portion of a test setup on the performance of lamp ballasts. Laboratories can rely on portable instruments built in accordance with the American Standard C39.1-1955.

Electrical Testing Labs

have offered soldering terminals on the instruments themselves. Manufacturing the instruments with such terminals represents a saving in the number of parts furnished since it makes it unnecessary to supply threaded terminals with their associated nuts and washers, and to further mount soldering terminals on those threaded studs. The new section reads as follows:

"4.12.3 *Soldering Terminals.* If furnished as an alternate to threaded terminals, soldering terminals shall be of such design as to allow for the external application of a soldering iron without any hazard of damage to the internal construction."

The paragraph on hardware for terminals takes cognizance of the soldering terminal situation by allowing for the omission of the terminal hardware, — nuts, screws, or washers,—where soldering terminals are furnished.

INSULATION TEST. Although instruments are generally well made with high insulation and necessarily with low leakage to ground if they are to measure accurately, it seemed wise to add to the standard an insulation test using a similar wording to that which has been incorporated in the more recent American Standard Direct-Acting Electrical Recording Instruments, C39.2-1953. In essence the test requires that leakage from all circuits connected together to the case shall not exceed 1 milliampere when measured at 800 volts nor 0.2 milliampere at 120 volts. It seems very doubtful if any of the instruments now in production could possibly exceed these values of leakage but the requirement has been incorporated in the standard so that it parallels good practice in electrical equipment generally.

Minor differences in viewpoint as to wording prevented the National Electrical Manufacturers Association from adopting the original standard as a NEMA standard. In developing the present revision a special meeting was had with those concerned in that organization to the end that these minor differences were ironed out. As a result, and with a very small change in wording, the standard has been approved and adopted by that organization and will be considered as the NEMA Standard for Electrical Indicating Instruments.

Over the five years intervening since the last edition, the standard has found favor with many organizations, and many sections of it have been incorporated into purchase specifications on the part of commercial organizations. Additionally, many organizations are purchasing instruments with a requirement that they conform to this standard, thus placing the standard in the position of one generally accepted by industry.

There was some discussion with regard to the possibility of covering the so-called "ruggedized instruments" now in demand by the Military. But such instruments are in their very nature more expensive than instruments not so ruggedized and it was felt by most of the commercial groups represented that there was a relatively small demand for such instruments in the commercial area. Thus ruggedized instruments are not included.

As indicated when the previous issue of the standard was announced, suggestions as to the improvement of the standard will be welcomed by the committee to the end that the standard be kept representative of current needs in this most important field.

H. W. Stuart

H. W. Lownie

USA Active in International Work On CAST IRON

by H. W. STUART

The first meeting of the international committee on Cast Iron, ISO/TC25, was held September 28 to 30 at the British Standards Institution, London, England. The secretariat of the committee is held by the United Kingdom and the chairman of the meeting was Dr J. G. Pearce, OBE, Director of the British Cast Iron Research Association.

Thirty delegates from ten countries — Belgium, Czechoslovakia, France, Germany, Italy, Netherlands, Sweden, Switzerland, United Kingdom, and the United States of America — attended the three-day meeting.

The USA delegation consisted of H. W. Stuart, Director of Quality Control of the United States Pipe & Foundry Company, and H. W. Lownie, Jr, Research Metallurgist of the Battelle Memorial Institute. Mr Stuart is chairman of ASTM Committee A-3, and also a representative of the American Foundrymen's Society.

The following Resolutions outlining the scope of the committee's work, principles to be followed, and work to be started, were adopted in accordance with previously prepared documents and following thorough discussion:

Resolution 1. ISO/TC25 should take into account the relevant activities of other international organizations and of the ISO technical committees concerned with the utilization of cast iron. It will endeavor to ensure coordination, in particular with ISO/TC17, Steel, the International Committee of Foundry Technical Associations, and Working Group No. 5 of the European Coal and Steel Community.

Resolution 2. The scope of ISO/TC25 comprises standardization of foundry pig iron and cast iron with a view to facilitating international trade; to this end the relative national standards will be reviewed, in particular for the coordination of nomenclature, definitions, and methods of test.

Resolution 3. The program of work of ISO/TC25 is as follows:

1. Terminology.

2. Definitions, classification of, and symbols for foundry pig iron and different types of cast iron.

3. Methods of mechanical testing (taking into account the work of ISO/TC17, Steel, and of the International Committee of Foundry Technical Associations) and methods of physical and chemical testing, notably including tensile tests; impact tests; transverse tests; as well as others.

4. Standards for cast iron of the following types: gray cast iron; malleable cast iron; cast iron with spheroidal graphite.

5. Specification of raw materials: pig iron; scrap iron, (internal scrap and purchased scrap); steel scrap.

The drafting of an ISO specification for tensile testing Gray Cast Iron was discussed in detail.

The ASTM Specification A 48-48, American Standard G25.1-1948, was submitted by the USA delegation for consideration where applicable and they believe that reasonable progress was made in making the ISO Draft Specification applicable to USA practice.

Dr Collaud, a delegate from Switzerland, presented a discussion of his paper, "New Suggestions for the Standardization of Gray Cast Irons." This indicated, it is believed, that TC25 will become a valuable means for exchanging practical information. Many delegates requested American Standards, and it was agreed that a more thorough exchange of existing standards is needed. As an example, it was argued at one stage that no country had specifications for Foundry Pig Iron. ASTM Specifications for Foundry Pig Iron have been in existence and have been actively revised since 1904.

Much interest was shown in Spheroidal Graphite Cast Iron. This iron is referred to as Ductile or Nodular Cast Iron in this country and it is obvious that standardization of terminology is needed. This type of cast iron will be the subject of prompt task force study and the USA delegation indicated active interest in the preliminary work.

It is the belief of the delegation that attended the meeting that much technical and economic value will come from continued participation in TC25 and they appreciate the opportunity to have attended this initial meeting. The details of this meeting will be discussed at the next meeting of ASTM Committee A-3, Cast Iron.

New Members Elected to ASA's Board

A. G. Jensen

FOUR NEW MEMBERS elected to the American Standards Association's Board of Directors took office January 1. They are H. E. Chesebrough, Axel Jensen, A. E. Pringle II, and Dr W. J. Sweeney. R. M. Gates, president of the Air Preheater Corporation, nominated by The American Society of Mechanical Engineers, was re-elected.

Mr Chesebrough is Executive Engineer in charge of the Product Planning and Programming Section of Chrysler Corporation's Engineering Division. He was nominated for membership on the Board by the Automobile Manufacturers Association. During the past year he was chairman of the Detroit section of the Society of Automotive Engineers.

Mr Chesebrough is a graduate of the University of Michigan, having received his degree in mechanical engineering in 1932. He earned his master's degree at the then-new Chrysler Institute of Engineering. Beginning as a laboratory engineer at Chrysler's Mechanical Laboratories in 1934, he became supervising engineer in the passenger car road test department, a project engineer for aircraft production at DeSoto, Chief Engineer at DeSoto, Chief Engineer at Dodge, an assistant chief engineer and then chief engineer, Body Engineering Section, Engineering Division, and finally was promoted to his present executive engineer post. This is a recently created position.

Mr Jensen is Director of Television Research for Bell Telephone

H. E. Chesebrough

Mr. Hallowell's Views

We have now come to that point in our highly complex American industrial economy where national standards can give us greater benefits than ever before in lower production costs, added efficiency, and better use of human and material resources.

We are in a new era of new technologies and new industries; diversification, mergers, and decentralizing executive command; high costs and squeezed profit margins; and great dependence of each industrial enterprise on its suppliers and sub-contractors. In this new era, we need as never before a common language among industry, science, insurance, labor, government, and the public. A comprehensive set of national standards for dimension, definition, performance, testing, and safety will provide that language.

We do not have an adequate set of well conceived national standards. Our progress in standards has lagged behind our advance in other areas of the national economy. Many companies today actually are not practicing what was learned about standards work in the 1920's. Some companies are indifferent to the national standards program, despite the fact that they profit from it daily in everything they buy and use. They are letting the work be done and the bill be paid by those enlightened and growing companies who lead their industries and who wisely recognize that the national program is a common responsibility of all American industry.

Many executives still look upon standardization solely as a technical function of production instead of as a management tool for planning and coordination. Technicians of private companies in new industries are tending to form industrial habits that vary widely from habits in other companies and other industries. American business is still using standards to straighten out problems and difficulties that should never have been permitted to arise, instead of using them early enough to prevent the problems and difficulties from ever arising.

Despite this lag, tremendous progress has been made in standards work in the past few years, and the promise for the future is even greater. The federal government, for example, has made a historic change for the better in policy in accepting industry standards wherever practical instead of writing its own. Standards engineers are taking their place on executive planning boards of more and more companies.

It is being more widely recognized that basic standards work that is not

R. M. Gates

A. E. Pringle II

Laboratories at Murray Hill, N. J. He was nominated for membership on ASA's Board by the Society of Motion Picture and Television Engineers. After receiving his degree in Electrical Engineering from the Royal Technical College of Copenhagen, Denmark, Mr Jensen did post graduate work at Columbia University. He has been with the Laboratories since 1922 when it was still the Engineering Department of Western Electric Company. At first he was engaged in radio-receiving studies and in the design of field strength measuring sets. Then he was assigned to London, England, where he spent five years in charge of the test station operated during development of trans-atlantic short wave service. He returned to the United States to work on coaxial cable system projects and was in charge of the development of terminal and measuring equipment for telephone and television. He became Research Engineer in charge of television research in 1938 and has been Director of Television Research at the Laboratories since 1952. He holds a number of patents.

Mr Jensen is a Fellow and at present a Director of the Institute of Radio Engineers, and has served as chairman of the Institute's Television Systems Committee and of its Standards Committee. He is also a Fellow of the Society of Motion Picture and Television Engineers and is now Engineering Vice-President of the Society. He has been awarded the G. A. Hagemann Gold

W. J. Sweeney

on Standards

done early in the life of new industries and technologies will have to be done later at a terribly increased cost in materials, manpower, dollars, and time. Only last month 175 representatives of government and private organizations concerned with the industrial uses of atomic energy met in Washington to discuss a national program for standards for design, construction, operation and safety of reactors and other atomic equipment. It is alarming that even now different states are drawing up different safety codes for atomic work done within their borders. The meeting agreed to work together under the auspices of the American Standards Association to draw up nationally coordinated standards for industrial atomic work.

As president of the American Standards Association, I will do everything within my power to carry out the directive which American industry has given us.

That directive, as I understand it, is to act as an instrument of private enterprise as clearinghouse and catalytic agent in national standards work; to serve as a bridge between industry and government in standards matters; and to express the viewpoint of American industry at the international level, primarily with a view to strengthening our country and improving our own foreign markets.

In carrying out these assignments, ASA has recently approved its 1500th American Standard. That is exactly double the number of American Standards in existence only eight years ago. Each of these standards is clear, concrete evidence that business has acted to remedy an unsatisfactory condition, to cure an industrial ill, to improve its efficiency, to regulate itself in its own and the public interest.

Committees are now at work under ASA auspices on 384 standardizing projects, in addition to constant work being carried on in revision of the standards already approved. The demand for printed standards has risen sharply in the past three years. International standards work is heavier and more fruitful than ever before.

There has been a great resurgence of national standards activities in the past few years. It is an excellent base on which American industry and its great trade associations and technical societies can build the much larger complex of integrated national standards that the economy must have to prosper and expand and further raise our American Standard of living.

Medal for Industrial Research by the Royal Technical College in Copenhagen and the David Sarnoff Gold Medal by the Society of Motion Picture and Television Engineers in recognition of the outstanding work he had done in television research.

Mr Pringle, member-at-large on ASA's Board, is vice-president of the Pringle Electrical Manufacturing Company. Mr Pringle is a graduate electrical engineer from Penn State University. He has long been active in the affairs of the National Electrical Manufacturers Association and has served as NEMA representative on ASA's Standards Council and Electrical Standards Board since 1947. He has been a member of the NEMA Codes and Standards Committee since 1929, and was vice-chairman in 1950. He is a NEMA representative on the U. S. National Committee of the International Electrotechnical Commission, and is chairman of the ASA Materials and Testing Standards Board.

Mr Pringle has been a member of the Underwriters' Laboratories Panelboard Industry Conference since 1927. He is also active in the American Institute of Electrical Engineers and is a member of its Standards Committee. He is a member of the AIEE Committee on Industrial Power System and past chairman of the Philadelphia Section.

Mr Pringle was chairman of the Committee on Procedure of the American Standards Association from 1952 to 1954.

Dr Sweeney, vice-president of the Esso Research and Engineering Company, was nominated to membership on ASA's Board by the American Petroleum Institute. He was graduated from the University of Massachusetts with a Bachelor's Degree in Chemistry, received his Master's Degree in Chemistry from the Pennsylvania State University, and his Doctor of Science Degree in Chemical Engineering from the Massachusetts Institute of Technology.

He went to work with the Standard Oil Company of Louisiana in 1929, and became Director of the Research Laboratories in 1934. He became Associate Director of the Research Division at the Esso Laboratories at Linden, New Jersey, in 1936. In 1945 he was transferred to the New York offices of the Esso Research and Engineering Company and was made a vice-president, member of the Executive Committee, and member of the Board of Directors.

Dr Sweeney has been called upon to serve on many industry and government committees. He has served as chairman of the Advisory Committee on Research of the American Petroleum Institute; president and Board member of the Co-ordination Research Council, Inc.; chairman of the Fuels and Lubricants Committee of the Department of Defense, member of the Corrosion Research Council, member of the Board of the Combustion Institute. He is also a member of the American Chemical Society, the Society of Automotive Engineers, the American Institute of Chemical Engineers, and the American Institute of Chemists.

Dr Sweeney's research experience has included most phases of petroleum process and product development. Among these are fluid catalytic cracking, hydrogenation, hydroforming, alkylation, and solvent extraction in the processes; and aviation gasoline, motor gasoline, fuels, lubricants, and chemicals in the products.

Are These Cases Work Injuries?

Rulings of the Committee on Interpretations are now being issued on whether unusual cases are to be counted as "work injuries" under the new edition of American Standard Z16.1-1955. Title of the standard is Method of Recording and Measuring Work Injury Experience. Sponsors of Committee Z16 are the National Safety Council and the Accident Prevention Department of the Association of Casualty and Surety Companies.

Case numbers in this new series start with 400. The cases below are the first in the series under the revised edition of the standard. The numbers in parentheses refer to those paragraphs in the standard to which the cases most closely apply.

An index is being prepared by the National Safety Council, arranged both numerically by case number and numerically by paragraph number of the standard. Each index reference will include a brief description of the case.

When the first 50 cases have been published, copies of the cases and the index will be made available at 50 cents per copy. Liberal discounts will be offered for quantity orders. Copies will be 8½ x 11 in. with margins for punching. Up-to-date indexes will be issued with each additional 50 cases.

CASE 400. (5.2)

An employee with four or five years service in a company reported that on Wednesday, January 12, he was piling 100 lb bags from a handtruck into a box car with another man. At one time, when he had finished piling up one bag and was stooping down to pick up one end of the next bag from the handtruck, he felt a catch in his back. There was a momentary pain that left within a few seconds. He continued working without any stoppage or making any comment to his fellow worker.

He stated that on the following date, January 13, he was conscious of a slight soreness in his back.

On Friday, January 14, his back was very sore and he noticed it every time he bent over. Because of this, he came in and reported the injury and was sent to the company doctor. The doctor diagnosed it as a sprained back and gave him some heat treatments and returned him to light work.

On Monday and Tuesday, the 17th and 18th, and on Wednesday, the 19th, he was back on his regular job handling 100 lb bags, but on Wednesday his back was bothering him considerably.

On Thursday, he did not report for work and his wife called in that morning stating that his back was sore and he was not able to work. The employee lost several days from work.

The company stated that throughout the years they have had many cases of men who have stooped over to pick up very light objects, such as a wad of paper on the floor, and suffered sore backs, and have had many cases of men who were handling 100 lb bags by themselves and suffered sore backs. Somewhere, between these two, is probably that line of demarcation which the committee would call "over-exertion."

In this particular case, this man was handling approximately 50 lb to a lift and he was handling them at the rate of perhaps five bags from the handtruck to a pile in the car in possibly from 45 seconds to a minute.

However, according to his story, this sudden pain in his back occurred not while he was lifting, but while he was stooping over to pick up the next bag.

Decision: This case should not be included in the work injury rates. There was no slip, trip, fall or other incident or accident, and the committee felt that the routine handling did not constitute overexertion.

CASE 401. (5.13)

On a Tuesday, members of the maintenance labor gang were engaged in cleaning windows inside the plant. At some locations this necessitated working over the heads of some of the production employees. When the window cleaners changed positions, the ladder had to be moved. Before moving the ladder, the man handling it warned the workers around him that he was about to do so. In making one of the moves, the man lost control of the ladder and it fell, striking one of the production employees on the back of the neck.

The man was sent to the doctor where x-rays were taken. No fracture was indicated and the man returned to work and finished his shift. He also worked the following day (Wednesday) but late in the afternoon suffered a severe headache and went to the doctor after work. The doctor advised that, if the headache persisted, the man should not work the next two days. The man did not work on Thursday and Friday but did return to work the following Monday.

Based on the negative x-ray results and the general condition of the man, there was doubt as to whether or not the time away from the job was necessary.

A decision was requested as to whether or not the intent of Section 5.13 would apply to this case, thus making it a medical treatment case rather than a lost-time accident.

Decision: The injury should be considered as a temporary total disability in accordance with the actual days lost from work. Paragraph 5.13, Hospitalization for Observation, is for the purpose of determining a latent condition and to prevent aggravation of a condition which might have resulted from a blow. This observation should be in a hospital, and is only concerned with the period of 48 hours from the time of the accident. In this case the committee believed that the time that this employee lost from work was for healing purposes and not for observation as contemplated in this paragraph.

CASE 402. (1.6)

On January 11, the employee involved reported to the first aid room and stated she had hurt her foot some way. At first, she did not recall how the injury came about but later she remembered bumping her foot on a metal bar on the bottom of a table in the cafeteria. Apparently, she was in the process of sitting down when she bumped her left instep on this metal bar.

With further thought, she recalled that this accident happened on January 7, at approximately 6:30 A.M.

This particular employee's work day started at 7 A.M. in the morning. She arrived at the plant early and had punched the time clock at the personnel entrance before going to the cafeteria for a cup of coffee.

In this particular plant, it is necessary for employees to punch two time clocks. The first time clock is located at the entrance to the plant and can be punched at any time. The time cards from this clock are used more or less for an attendance check.

When the employee reports to his department for work, he punches another time clock located in the department. There are limitations as to the number of minutes that can be shown on the time card previous to the official time for work to start. The departmental time cards are the ones used to determine payrolls.

Since this employee had not yet punched the departmental clock, she was not officially into her working day. The plant does not require the employees to arrive one half hour early in order to drink coffee in the cafeteria. However, it is common practice for employees to arrive early and spend time in the cafeteria.

Eventually, a total of two days were lost by this employee due to the injury.

Decision: The injury to this employee should not be included in the work injury rates, on the basis that it did not arise out of and in the course of employment. Some of the members commented that this case was quite similar to example 3 in the Appendix under paragraph A1.6(h).

CASE 403. (1.6)

An employee assigned to work as a craneman came down off the crane he was operating during his lunch hour, and began to grind the blade of his personal knife on a stationary chisel grinder. The knife, constructed of an aluminum handle and a steel blade, was the type used for cutting linoleum or doing similar work.

As he was grinding, the blade evidently got caught between the wheel and the tool rest in such a way that the blade broke and wedged his hand against the wheel causing the employee to sustain a deep laceration across the palm of the left hand, with a laceration of the tendon of

the ring finger. There may be a permanent impairment of the left ring finger. After the injury was incurred, the employee stated he felt it was only a small laceration, and that he did not pay any attention to it at the time. He said he left the grinder to return to the crane for his lunch, going up the ladder and reaching into the crane cab from the ladder. He stated that he fell while descending the crane ladder, and then returned to his feet with his lunch in his hand and walked about twenty feet to sit down near a gas stove and eat his lunch. At that time he noticed his hand was bleeding very badly and he hurried to the Plant Hospital.

On the night of the accident the injured employee refused to state how the accident occurred. However, the blade and the handle of the knife were found inside the guard of the stationary chisel grinder. Aluminum particles were observed on the grinding wheel, and blood stains were observed on a small casting near the grinder.

The question was raised as to whether this should be considered a disabling work injury on the basis that he was sharpening a knife which was to be used for his personal benefit and not performing any act which would benefit his employer.

Decision: The injury should not be included in the work injury rates. The committee concluded that this employee had taken himself out of his employment when he started grinding his own knife, and that he was in no way furthering the interests of his employer in connection with this injury.

CASE 404. (1.6)

Certain plant guards are required to punch in at Gate A and be on duty at Gate B by shift change time. On day shift they must be at Gate B by 8 A.M. after having punched in at Gate A. Gate B is located about ¼-mile from Gate A.

After punching in at Gate A these guards can walk to Gate B within the plant premises, or they can go to Gate B by car, the route being on a public street over which the plant has no jurisdiction.

The plant has never made any rule on how guards are to go to Gate B after punching in at Gate A. It has become a known practice for guards who drive their own cars to work, to drive to Gate A, punch in, and drive their cars to Gate B, arriving by shift change time. The plant does not pay for this self-transportation nor provide alternative transportation.

On the day in question a guard drove his car to Gate A and punched in at 7:44 A.M. Then he proceeded to drive in his car to Gate B, taking the usual route along the bordering public street outside the plant premises, in order to be at Gate B by 8 A.M. At about 7:50 A.M. (before reaching Gate B) he was involved in a collision with another car (driven by a non-employee), and suffered injuries necessitating hospitalization.

Decision: This injury should be included in the work injury rates. Since this employee had already entered plant property at Gate A, and had punched in on the time clock, it was considered that he was still within his employment while traveling to the second gate.

CASE 405. (1.6)

An acid truck was making a delivery to a plant. After being hooked up, 26-lb air pressure was applied, normal working pressure for the tank being 30 lb. After several minutes a weld on the manhole locking bracket failed, allowing the manhole cover to loosen and spraying 66-deg sulphuric acid over a considerable area.

One of the company's employees, who was assigned to see that valves on company tanks were correctly set and assist the truck driver, if necessary, in making the piping connections, having completed his work several minutes before, was walking by the truck and was sprayed with the acid. At the time he was still wearing his face shield and protective clothing; nevertheless, he did suffer burns on the neck and ears, causing him to lose time from his job.

It was the company's feeling that this man did not, nor did any of their employees, do anything to contribute to this accident, nor was there anything they could have done to prevent the accident, and therefore the company should not be charged with it.

Decision: This injury should be included in the work injury rates. This employee was in the area as a requirement of his employment, and this injury arose out of and in the course of his employment, and therefore should be included in the rates. The Introduction to the standard specifically covers this point wherein it states, "The fact that the employee or employer did not have control over the cause of a work injury shall not be a criterion for excluding the work injury from application of the provisions of this standard."

CASE 406. (1.6)

Injured was a substation operator and at the time of the alleged accident was on shift alone, his shift being from 11 P.M. to 8 A.M. The accident occurred at 2:15 A.M.

Other than to perform his regular duties as an operator, he was under no instructions nor authorization to do any other work nor to leave the scene of his work area. He decided to saw a narrow strip from a piece of ¼-inch plywood to place in a desk drawer as a divider. To saw this piece of wood he supposedly used a bandsaw, which was placed the length of a large building away.

The bandsaw was not properly adjusted for the material and had no guard. Also, the injured held the material being cut in such a manner that when the saw finished cutting the material, the index finger was forced against the blade of the saw. The saw cut half-way through the second joint of the index finger of the right hand. It was necessary for the doctor to operate on the finger in order to sew together the tendons cut by the saw. The injured lost several days from work.

The company reported that they had learned from several sources, the injured's friends and fellow workmen, that he was injured while working on his personal car while on duty.

The Division Manager and the Division Superintendent again questioned injured, telling him of information about the car, but he maintained he was injured while operating the bandsaw.

The company stated further that initiative is commendable, but not when exercising it takes a person away from his work area, creating a hazard by his absence. That opinion was perhaps not pertinent toward a decision, the company commented, but it was mentioned only because injured was not authorized nor instructed to leave his work area nor required to perform any other duties than those expected of him.

There was no reason so far as the company knew to doubt the statement of the injured who had been a good workman for the past 15 years, but in view of the circumstances, they wanted to know whether the case should be counted as a lost-time work injury.

Decision: The injury should be considered a work injury and included in the rates. The committee commented that the case had been beclouded by a rumor that the man injured himself while working on his own automobile, but the company cited no proof to substantiate this rumor, and under these circumstances the injured employee's statement should be accepted. Although the employee was not performing work authorized by the employer at the time of the accident, he evidently was performing work which he thought to be in the interest of his employer.

CASE 407. (5.3)

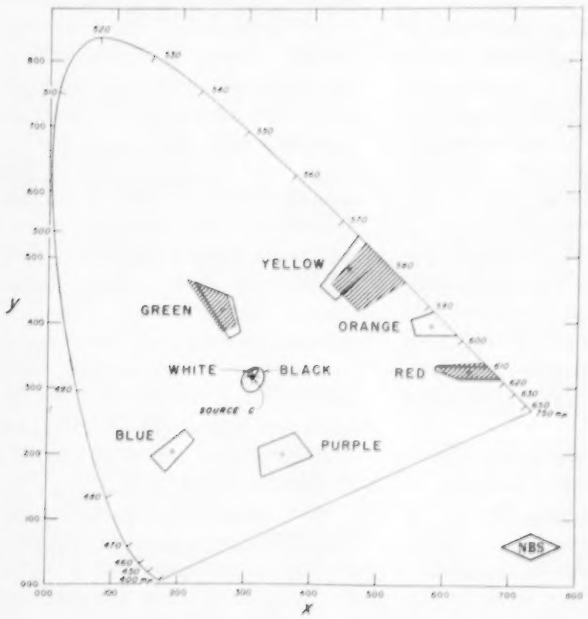
A fixer in the Card Room who works on second shift from 4 P.M. to 12 midnight came up with an infected leg and was forced to lose some time away from work.

Prior to his coming to work he had taken a bath and immediately noticed a pimple on his knee. He definitely remembered at that time pulling a hair out of the pimple. He did not use any type of first aid on his knee, but rather when he came to work changed to his work clothes which were filled with grease. His job required a great deal of stooping and bending which caused the work clothes to come in contact with the pimple on his knee. After working for more than two hours he attempted to place a belt on a pulley of the carding machine by using the leg which had the pimple on the knee. He did not strike his knee with the belt, but in placing the belt on the pulley it caused his pants leg to become tight and to pull the top off the pimple, which was about the size of a match head. He immediately placed a band-aid over the infection, but in about 1½ hours he was having pain with his knee. The following morning the infection was so far advanced that he was told to stay off his leg, and the knee was later lanced.

The doctor could not render an opinion as to whether or not he would have had the same trouble if the head had not been brushed off the pimple.

Decision: This injury should be included in the work injury rates. The committee believed that the wearing of greasy clothes in performing his duties aggravated the pre-existing condition of his leg.

Porcelain enamel plaques in all American Standard safety colors except purple will soon be available from the National Bureau of Standards for calibrating colorimeters. W. K. Hammond, using machine to measure color differences of plaques in box at right (above), will be in charge. Below, shaded areas show ISO color definitions in relation to American Standard.



Safety **COLOR** Codes

by HARRY J. KEEGAN

Mr. Keegan is a member of the American Standards Association Sectional Committee on the Safety Color Code Z53 representing both the National Bureau of Standards and the Inter-Society Color Council (ISCC).

A PROPOSAL for a draft recommendation on safety colors, prepared by the International Organization for Standardization Technical Committee ISO/TC80, was received recently. It contains the Commission Internationale de l'Eclairage specifications of the lines of limiting hues and saturation and tolerances of luminance factor β for the three colors recommended; namely, Safety green, Stop red, and Danger orange-yellow.

It is interesting to note that the three chromatic colors and their uses in the ISO document are essentially the same as those stated in the original American War Standard Safety Color Code for marking physical hazards and the identification of certain equipment (ASA Z53.1-1945). The present American Standard Safety Color Code, Z53.1-1953, recommends the use of six chromatic colors, red, orange, yellow, green, blue, and purple. However, the color definitions for the colors red, yellow, and green are the same in both the American War Standard and the American Standard. From the diagram above, it may be noted that the ISO and the ASA definitions for the colors red, green, and yellow (or orange-yellow) are essentially the same.

The ISO specifications resulted from a meeting at The Hague in May 1955 of a special ISO subcommittee on "Definitions of Safety

Colors," at which Dr Deane B. Judd, National Bureau of Standards, was the representative from the United States of America. If approved by Technical Committee 80, the member-bodies of ISO and the ISO Council, the specifications will become an ISO Recommendation for international use.

The parts of the text on color are as follows:

1. *Purpose and use.* Recommendations are given with regard to the meaning and the application of a number of colors that are to be used for the purpose of prevention of accidents and to meet certain emergencies which may arise in industry and public life.

Safety colors are not intended to be substitutes for proper accident-prevention measures.

Dangers should be removed and accidents prevented by appropriate measures of protection. The use of safety colors is allowable only in cases in which it is impossible to apply appropriate safeguards.

2. *Safety colors and their general meaning.*

Color	*Meaning*
Green	Freedom from danger Free exit First-aid stations and materials
Red	Stop Fire fighting equipment
Orange-yellow	Warning of danger

3. *Definition of the safety colors.* This definition is restricted to colors of surfaces which diffuse and reflect light.

The safety colors are defined by means of the CIE system of color specification, as accepted in the resolution of the 8th session, 1931, of the Commission Internationale de l'Eclairage, Cambridge, UK.

The specifications are expressed in CIE chromaticity coordinates x and y, and the luminance factor β, determined under CIE conditions of illuminating at 45 degrees with CIE source C and viewing along the perpendicular to the surface.

Three three safety colors are defined as follows:

Color Name	*CIE chromaticity coordinates x and y, luminance factor β*
Safety green	$x > 0.526 - 0.683y$ $x < 0.410 - 0.317y$ $y > 0.282 + 0.396x$ $y < 0.547 - 0.394x$ $0.15 < \beta < 0.30$
Stop red	$y < 0.290 + 0.080x$ $y > 0.920 - x$ $y > 0.559 - 0.394x$ $y > 0.316$ $0.07 < \beta < 0.15$
Danger orange-yellow	$x > 0.048 + 0.827y$ $y > 0.120 + 0.632x$ $y > 0.887 - x$ $\beta > 0.45$

4. *Directions for the application of safety colors.*

Safety colors should be applied in a very visible manner and generally on small surfaces so as not to interfere with color schemes in which colors are applied to relatively large surfaces.

Black and white are recommended to be used as contrasting colors.

In general, safety colors are used in the form of safety signs.

Nuclear Energy (*continued from page* 11)

formed to head up work with the mechanical engineering aspects of nuclear power.

The ASME has also established a separate committee on nuclear power. This committee is to deal with those aspects of components of nuclear reactors which in a conventionally fired plant are normally covered by the boiler code or the code for pressure vessels.

In addition, the National Research Council has prepared a glossary of terms in nuclear science and energy and the American Society of Mechanical Engineers has published it as a Proposed American Standard.

ASA Sectional Committee Z54 on Industrial Radiation Protection, of which the National Bureau of Standards is sponsor, is dealing with some problems in this field.

The National Committee for Radiation Protection, also under the auspices of the National Bureau of Standards, has been working on basic information concerning safe dosage levels, protection techniques, and so on.

It was the opinion of the conference that standards activities in connection with nuclear energy should be coordinated through the procedures of the American Standards Association.

Endorsing the recommendation of the conference for ASA action, F. K. McCune, vice-president, General Electric Company, said: "It is unfair to expect any single branch of the government, such as the Atomic Energy Commission, to carry on its own use of this material, protect the general public, and also maintain a gigantic program for industry and its employees at the same time." The truly democratic processes of the American Standards Association provide the only means for a set of national standards, he said. "Through ASA procedures, industry can meet on a common ground and provide safety for their employees and the general public and promote the simplest and most productive use of this force," he told the conference.

The conference was called by ASA following requests for work on standardization in the field of nuclear energy from such organizations as the American Society of Mechanical Engineers; the American Institute of Chemical Engineers; the Atomic Industrial Forum; and the National Electrical Manufacturers Association.

In requesting the American Standards Association to appoint a Planning Committee, the conference asked that the committee undertake its task "actively and urgently." The committee is to report its findings and recommendations to the conference.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering please refer to the number following the title.

001.4 SCIENTIFIC NOMENCLATURE

United Kingdom (BSI)

Nomenclature of commercial timbers including sources of supply
BS 881 and 589:1955

05 PERIODICALS, REVIEWS

Sweden (SIS)

Abbreviation of titles of periodicals
SIS 734101

371.6 SCHOOL BUILDINGS, APPARATUS, ETC

United Kingdom (BSI)

School dining tables and chairs
BS 2639:1955

536.5 TEMPERATURE MEASUREMENT

Rumania (CSS)

Standard temperature STAS 1033-50

542.1 CHEMICAL LABORATORIES EQUIPMENT

Czechoslovakia (CSN)

Ground glass taper joint CSN 703005
11 stds for different glass funnels
CSN 703070
Flasks, pyrex brand CSN 703811
16 stds for different butyrometers
CSN 706676/91

Germany (DNA)

Pipettes used for milk testing DIN 10283

614.84 FIRE, FIRE BRIGADE

Belgium (IBN)

Delivery pipes	NBN 375
Triple branch valve details	NBN 341
Hydrant stand pipe details	NBN 362
Multi-sectional ladder	NBN 378
Hook ladder	NBN 379
Acceptance test of centrifugal fire pumps	NBN 394
Fireman's axe	NBN 395

Czechoslovakia (CSN)

Fire protection of industrial plants and residential places CSN 730760

Germany (DNA)

Fire fighting vehicles DIN 14530

Rumania (CSS)

Fire hose couplings STAS 701-54
Fireman's axe and pick STAS 4554-54
Fire-extinguisher on wheels
STAS 4607-54
Rubber packing for standpipes
STAS 4698-55

Sweden (SIS)

3 stds for fireproof doors of steel
SIS 566611/3
3 stds for bucket pumps SIS 1189/91

620.1 TESTING MATERIALS

Germany (DNA)

Testing of materials and tools: warming up cupboard DIN 50011, Bl. 1 and 2

United Kingdom (BSI)

Roughness comparison specimens-ground cylindrical type (primary texture):
BS Part 1 2634: Part 1:1955
Drafting specifications based on limiting the number of defectives permitted in small samples (B. P. Dudding)
BS 2635:1955

621.1 STEAM ENGINES, BOILERS

Rumania (CSS)

Piston rings for locomotive cylinders, standard sizes STAS 4611-54

621.3 ELECTRICAL ENGINEERING

Canada (CSA)

Construction and test of temperature-indicating and -regulating equipment (Canadian Electrical Code)
C22.2 No. 24-1955
Construction and test of cooking and liquid-heating appliances (domestic and commercial types) (Canadian Electrical Code) C22.2 No. 64-1955

Czechoslovakia (CSN)

Electrolytic degreasing CSN 038011
5 stds for different methods of electroplating CSN 038121
Method of testing of enameled electrical domestic appliances CSN 039080
Battery operated small trucks
CSN 268810
12 stds for different types and sizes of automobile generators
CSN 304210/20,-22

Germany (DNA)

Graphical symbols used in power and telecommunication circuits
DIN 40700 Bl.3, 4
Dry rectifiers, terminology DIN 41750
6 stds for different methods of testing insulating material DIN 53480/3, Bbl.1, 2
DIN 53484
Ceramic conduits for cable installation
DIN 457, Bl.1
Involute gearing for electric railroads
DIN 43226
Carbon brushes and brushholders for electric railway motors DIN 43054, Bl.1
Table of different sizes of positive plates of stationary storage batteries
DIN 40731
Steel conduits for electric wiring
DIN 49001
Electric thermocouple elements
DIN 43732

United Kingdom (BSI)

General aspects of radio interference suppression CP 1006:1955

Italy (UNI)

Manually operated telephones for railways and tramways UNI 3604

Japan (JISC)

Method of noise-testing for carbon resistors JIS C 6403-1952*

The Netherlands (HCNN)

Telecommunication. Color code for electric cables N 1597
Domestic refrigerators. Terms of electrical components N 2165
Nomenclature of electric articles on switch and distribution boards of medium- and high voltage N 3041
Telecommunications. Cast iron branching box for underground cables V 1637
Telecommunication. Lead branching boxes for underground cables V 1638
Cadmium electroplating on steel and brass
V 2166
Zinc electroplating on steel V 2167

Rumania (CSS)

H. T. Warning signs STAS 297-54
Outlet and connecting boxes
STAS 552-53
Wires and cables for inside lines
STAS 2183-55
Terminal and junction boxes for HT paper insulated lead sheathed cables for voltages 6-15 kv STAS 2822-54
Rectifiers, selen, up to 3 kv, 100 amp. 3 kw STAS 3034-52
Swan-neck brackets for insulators
STAS 3387-52
Oil transformers, three-phase, up to 110 kv, and from 1,800 kva to 10,000 kva
STAS 3470-52
Interurban communication insulated copper wires; dimensions STAS 3536-55
Standard scale of power and voltage of asynchronous motors 1 to 100 kw
STAS 3564-52
Electric rotating machinery. Terminology
STAS 4296-54
Aluminum cable shoes, 25-500 mm²
STAS 4322-54
Voltage transformers for measuring apparatus STAS 4323-54
H. T. paper insulated, lead sheathed cables for 1, 3 and 6 kv STAS 4481-54
Protection against electric interference in telecommunication lines, diagrams
STAS 4482-54
Copper and bronze telecommunication wires. General STAS 4483-54
Types of wedge acting transformer cable clamps STAS 4574-54

Sweden (SIS)

Graphical symbols for electrical telecommunications SEN 4201
Arc welding equipment SEN 8301
7 stds for porcelain electrical insulators of different composition SEN 040550/6
15 stds for test specifications for different mechanical and physical properties of porcelain insulators
SEN 040505/6, 040511/6, SEN 040519/25
6 stds for test specifications for dielectric properties of porcelain insulators
SEN 040526/31

United Kingdom (BSI)

Components and filter units for radio interference suppression BS 613:1955
Air-break switches and isolators—Part 1: Switches and isolators for voltages not exceeding 660 volts and for currents not exceeding 200 amperes BS 861:Part 1:1955
Oil switches for alternating current systems BS 2631:1955

621.4 INTERNAL COMBUSTION ENGINES

Czechoslovakia (CSN)

6 stds for screwed connectors for high pressure fuel injecting pumps, details CSN 301890/5

621.51 PNEUMATIC APPARATUS AND MACHINES

Rumania (CSS)

Rubber packing for pneumatic brake hose connections STAS 4697-55

621.61/.63 BLOWING MACHINES

The Netherlands (HCNN)

Fans: designations, standard series and dimensions V 1048 A

621.64 DEVICES FOR CONVEYANCE AND STORAGE OF GASES AND LIQUIDS IN GENERAL

Czechoslovakia (CSN)

18 stds for gas tanks and fittings CSN 078601/2,-078610/4, 078618/27
3 stds for pipe fittings, general CSN 13305/7

Rumania (CSS)

Methan pressure regulating valve up to 16 kg/cm² STAS 1057-54
Butt-welded pipes STAS 4578-54
Check valves, cast iron, for pressure up to 10 kg/cm² STAS 4631-54
Wedge gate valves, cast steel, up to 100 kg/cm² pressure STAS 4656-54

United Kingdom (BSI)

Light gauge copper tubes for water, gas and sanitation BS 659:1955
Concrete porous pipes for under-drainage BS 1194:1955

61.643 CONDUITS, PIPES AND ACCESSORY PARTS

The Netherlands (HCNN)

Bronze and brass brazed flanges for copper tubes, pressure stage I-6, II-5 N 652
Bronze and brass brazed flanges for copper tubes, pressure stage I-10, II-8 and I-16, II-13 N 653
Split collars, cast iron, for pressure main lines V 2232
Seamless copper tubes for steam and feed pipes on ships V 2262

Spain (IRATRA)

Flanges-arrangement of bolt holes UNE 19159

United Kingdom (BSI)

Concrete cylindrical pipes and fittings including manholes, inspection chambers, and street gullies BS 556:1955

621.74 FOUNDRY WORK

Czechoslovakia (CSN)

3 stds for amorphous foundry graphite CSN 721680/2

Rumania (CSS)

Terminology used in foundry work STAS 4600-54

621.753 TOLERANCES, FITS, GAGES

Spain (IRATRA)

Loose fit, definitions, symbols UNE 4027
Tight fit, definitions, symbols UNE 4028

Sweden (SIS)

ISA-tolerances. Hole F 6 up to and incl. P 6 SMS 509 (2nd ed.)

621.78 HEAT TREATMENT OF METALS

Argentina (IRAM)

Terms relating to heat treatment of metals IRAM 540

621.791 SOLDERING, WELDING, CUTTING

United Kingdom (BSI)

Projection welding of low carbon steel sheath and strip BS 2630:1955
Class II oxy-acetylene welding of steel pipelines and pipe assemblies for carrying fluids BS 2640:1955

Israel (SII)

Soft solders SI 150

621.798 PACKING AND DESPATCH EQUIPMENT

United Kingdom (BSI)

Carnation/rose boxes BS 2636:1955

Sweden (SIS)

Transport box for heavy goods SIS 711105

621.82 SHAFTINGS, BEARINGS, COUPLINGS, ETC.

Germany (DNA)

2 stds for splined shaft coupling DIN 5462/3

Rumania (CSS)

Ball and roller bearings, Classification STAS 1678-50

621.832 BELTING

Czechoslovakia (CSN)

5 stds for different types of fabric belting CSN 808085, -8743, 87-46, -8752, -8755

66 CHEMICAL INDUSTRY, CHEMICAL TECHNOLOGY

Argentina (IRAM)

Lead- and tin-base solder; chemical analysis IRAM 633
Nickel, chemical analysis IRAM 641
Carbon steel, cold forging IRAM 543
Cast iron scrap IRAM 637

Austria (ONA)

Blast furnace slags ONORM B 3313
"S" type steel for building and bridge construction ONORM M 3114

Czechoslovakia (CSN)

3 stds for chemical analysis of commercial iron CSN 420514/6
5 stds for different types of fuel atomizers CSN 302305,-302351/3, 302359
Hydrotechnical concrete; definition, classification and specification CSN 732020

Denmark (DS)

Aluminum and Aluminum alloys: General survey DS 15000
Aluminum "A1 001" (99% pure) DS 15001
Aluminum "A1 002" (99.5% pure) DS 15002
Aluminum "A1 003" (99.7% pure) DS 15003
Aluminum Alloy "A1 101" (8% Cu) DS 15101
Aluminum Alloy "A1 201" (2% Mg) DS 15201
Aluminum Alloy "A1 202" (3.5% Mg) DS 15202
Aluminum Alloy "A1 203" (5% Mg) DS 15203
Aluminum Alloy "A1 251" (1% Mg + 1% Si) DS 15251
Aluminum Alloy "A1 252" (5%Mg + 1% Si) DS 15252
Aluminum Alloy "A1 301" (1% Mn) DS 15301
Aluminum Alloy "A1 501" (13% Si) DS 15501
Aluminum Alloy "A1 511" (5 % Si + 3% Cu) DS 15511
Aluminum Alloy "A1 512" (9% Si + 3.5% Cu) DS 15512
Aluminum Alloy "A1 621" (6% Zn, Mg, Cr and Ti) DS 15621

France (AFNOR)

Zinc ingots NF A 55-101
Lithopone, pigment NF T 31-007

Germany (DNA)

Determination of density DIN 51757
Determination of viscosity by Engler's method DIN 51560
Characteristics of fuel for airplane motors (Ottomotors) DIN 51600
Characteristics of Diesel fuels DIN 51601
Testing of paraffins DIN 51573
Rolled shapes for window metal frames DIN 4443/4, 4447
Beer bottles DIN 6089

India (ISI)

Specification for cyclohexane (Hexahydro benzene) for paints IS 643-1955
Dipentene for paints IS 644-1955
Copper bars and rods for electrical purposes IS 613-1954

Japan (JISC)

Method of testing tin plating JIS H 0402

Mexico (DGN)

Brass wire DGN B 72-1954
Aluminum wire used in electrical circuits DGN I 27-1955
Lithopone DGN K 44-1954

New Zealand (NZSI)

Specification for portland cement paint-powder (white and light tints) 1127, March, 1954

Poland

2 stds for chemical analysis of nickel alloys PN H-04815
Chemical analysis of cobalt PN H-04211
Marking of pig-iron of different manufacture PN H-83001/2
Carbon steel forgings PN H-93431,-94004

Determination of moisture content in hydrocarbons PN C-97072
Solid lubricants, testing of PN C-04048
2 stds for machine oil PN C-96091, -154

Portugal (IGPAI)

Paints and varnishes, terminology, definitions NP-41

USSR

Tri-ply safety glass GOST 7051
Sheet glass for windows GOST 111
Glass fiber textile products GOST 6943
Clay tiles GOST 1808
Concrete blocks, solid & hollow GOST 6928
Field spar and pegmatite for fine ceramics GOST 7030
Fine quartz sand for fine ceramics GOST 7031
Clay for fine ceramics GOST 7032
Transmission oils GOST 3823
Determination of mercaptan sulfur content in motor fuel GOST 6975
Determination of aromatic hydrocarbon contents in mineral oils GOST 6994
Pyrobenzol GOST 7079
Sodium nitrate, technical GOST 828
Sodium nitroprusside GOST 6817
Dicyanodiamide, technical GOST 6988
Green vitriol GOST 6981
Formaldehyde, technical GOST 1625
Acetic acid, synthetic GOST 7077
Aluminum oxide, technical GOST 6912
Phenol, synthetic GOST 236
Anthracite and other solid fuels: quick method of determination of moisture content GOST 6963

United Kingdom (BSI)

Glycerine (Glycerol) BS 2621-5:1955

Uruguay (UNIT)

Determination of inorganic substances and ash content in bituminous materials UNIT 105-55
Asphalt cement UNIT 106-55
Sampling of bituminous materials UNIT 107-55
Determination of losses in petroleum and bituminous products, due to heating UNIT 108-55

675 LEATHER INDUSTRY

India (ISI)

Sampling and testing for vegetable and chrome tanned leathers IS:582-1954

Poland

Classification of sole leather PN P-22216

676 PAPER INDUSTRY

Argentina (IRAM)

Carbon paper, black IRAM 3028

Chile (INDITECNOR)

Paper bags INDITECNOR 32-1
Sampling and testing of paper used for manufacturing paper bags INDITECNOR 32-2

France (AFNOR)

School copybooks and similar articles NF Q 31-009

677 TEXTILE INDUSTRY

Czechoslovakia (CSN)

5 stds for different test methods of textiles CSN 800341/5

France (AFNOR)

Terminology of embroidered, pattern woven, and similar fabrics NF G 00-501

Germany (DNA)

Crocheted and knitted children's underwear DIN 61527
Testing of textiles for resistance to "hard" water DIN 53905

India (ISI)

Methods for determination of mean fibre-length of cotton and the proportion by weight of fibres of different length-grades in cotton IS 233-1954

Japan (JISC)

Method of testing cotton yarn JIS L 1008 *
Method of testing staple fibre yarn JIS L 1009 *
Inspection of cotton yarn for export JIS L 1101 *
Hemp ropes JIS L 2701 *

Poland (PKN)

3 stds for woven tape PN P-04743

United Kingdom (BSI)

Fibre cores for wire ropes BS 525:1955

678 RUBBER INDUSTRY

Czechoslovakia (CSN)

General requirements for physico-mechanical tests for rubber and rubberized fabrics CSN 621404

Switzerland (SNV)

Tension test for vulcanized rubber VSM 77050

679.5 PLASTIC INDUSTRY

Czechoslovakia (CSN)

Terminology of plastics CSN 640001

Germany (DNA)

Determination of breaking index and dispersion index of plastics DIN 53491
Migration test of plastics DIN 53405

681 FINE MECHANISMS. CLOCKS AND WATCHES. MUSICAL INSTRUMENTS

Austria (ONA)

5 stds for different details of industrial thermometers ONORM M 5800, 5802, ONORM M 5804/6

Czechoslovakia (CSN)

37 stds for different types of indicating devices and details used chiefly in checking when mounting machine tools CSN series 2519
4 stds for gramophone needles CSN 173280, -2/3, -5.

Germany (DNA)

Magnetic sound recording and reproduction DIN 45510

683 HARDWARE. IRONMONGERY. LAMPS AND STOVES

Germany (DNA)

3 stds for different window hardware DIN 18270, -275, -280
13 stds for different door hardware DIN 18251 Bl 1-4, 18255 18256 Bl 1, 2, 18257 Bl 1, 2 18258/9, 18260 Bl 1, 2

Sweden (SIS)

Dimensions for mail-drop plate SIS 548710

683.9 HEATING APPLIANCES, HOT WATER

United Kingdom (BSI)

Domestic appliances burning town gas—Part 3: Specific requirements for water heaters other than wash boilers and washing machines BS 1250: Part 3: 1955

69 BUILDING INDUSTRY AND TRADES. BUILDING CONSTRUCTION

Belgium (IBN)

Particular conditions for the installation of low-pressure central heating NBN 239
Particular conditions for the installation of high-pressure central heating NBN 240
Test methods for the determination of calorific emission of unit heaters NBN 317

Chile (INDITECNOR)

Quality and granulometric composition of aggregates INDITECNOR 30-37
Testing of clay bricks INDITECNOR 30-54
Solid clay bricks INDITECNOR 30-55
Hollow clay bricks INDITECNOR 30-56

Germany (DNA)

Plasters DIN 1168, Bl. 1 & 2

Mexico (DGN)

Refractory mortar for furnaces DGN C 32-1954

Poland (PKN)

2 stds for testing caustic magnesite PN B-04530/1
2 stds for wood filler paste PN B-14244, -04540

United Kingdom (BSI)

Small domestic hot-water supply boilers using solid fuel BS 758:1955
Quality of timber and workmanship in joinery—Part 2: Quality of workmanship BS 1186:Part 2:1955
Gypsum plasterboard BS 1230:1955
Concrete flooring tiles and fittings BS 1197:1955

74 DRAWING

Portugal (IGPAI)

Method of folding technical drawings NP-49

77 PHOTOGRAPHY

France (AFNOR)

Raw stock cores for 35mm film, 300m long NF S 24-006
Raw stock cores for 35mm film, 120m long NF S 24-008
Areas provided on 35mm and resp. 16mm films for titles, fixed or animated drawings and for television transmission NF S 24-009
Mechanisms for intermittent advancement of 35mm films NF S 24-010
Special conventional printing signs NF S 25-005
Printing machines. Lighting of printed images NF S 25-006
Characteristics of 16mm projector lenses NF S 26-105
Series of sizes of screens for 35mm and 16mm projectors NF S 27-005
Picture taking studios. Elements of sets NF S 27-006
Different stage requisites for picture taking studios NF S 27-007
35mm picture taking: test object NF S 28-004
Specification and test methods of sound projection equipment NF S 28-005
Test methods of "projection" type incandescent lamps NF S 28-006
Definition and measurement of characteristics of projection screens NF S 28-007

Germany (DNA)

Motion picture terminology DIN 15580, Bl. 5

NEWS BRIEFS.....

J. L. Cranwell presents desk set to Cyril Ainsworth (upper left); J. W. McNair (far left); Miss Herta Wiegman receives award (above); Miss Ruth E. Mason (left).

• Four members of the staff of the American Standards Association completed 25 years of service with the Association in 1955. J.L. Cranwell, vice-president of the Pennsylvania Railroad, then president of the Association, presented a desk clock and calendar set "in recognition of service and loyalty" to Cyril Ainsworth, Technical Director of ASA; J. W. McNair, Assistant Technical Director; Miss Hertha Wiegman (Mrs Dale Curran), Librarian; and Miss Ruth E. Mason, editor-in-chief.

• New York State has been added to the list of some 43 states that have adopted the new white-on-red "Stop" signs recommended by the American Standard for Traffic Control Devices, D6.1-1955 (MAG OF STDS, Sept 1955, p 261). The New York State Traffic Commission announced in November 1955 that it had approved the change from the former black-on-yellow signs for use on state highways and on county and town roads that intersect state highways. Main reason for the color change is uniformity both with other states and within New York State, explained Motor Vehicle Commissioner Joseph P. Kelly. It is expected that the changeover will be complete by January 1960. During the four-year changeover period, both the yellow and red signs will be permitted.

Tests over a period of one year showed that accidents were cut 40 percent at 19 intersections when marked with the red signs, Mr Kelly reported.

• K. E. Bredahl Sorensen, professor and civil engineer, has been named president of the Danish standards association, Dansk Standardiseringsraad. Mr Bredahl Sorensen is a Professor at the Technological Laboratory of the Technical University of Copenhagen. He specializes in technical management and is well acquainted with standardization problems.

Legal Implications

(*continued from page 7*)

an illegal purpose or effect. For example, the Federal Trade Commission in one case ordered the respondent to cease and desist from using the standardization program for the purpose or with the effect of fixing prices. There is very recent authority for the same approach by the Justice Department. A consent judgment was entered on August 4, 1955, against the Roll Manufacturers Institute and a number of individual companies. There were standardization products which, the Justice Department believed, facilitated uniformity of prices. The consent decree does not completely enjoin the standardization program. Rather, it enjoins the defendant association from "adopting, promulgating, or approving any standard for cast iron or cast-steel rolls which may have the purpose or effect of preventing the manufacture or sale of rolls not conforming to such standard."

I have previously mentioned the Federal Trade Commission's case involving lead pencils. There, the parties were ordered to cease and desist from investigating or consulting with each other with respect to a standardization program having as its objective the limitation of the

styles, grades, or qualities of wood-cased lead pencils manufactured and offered for sale by any of the respondents.

I have indicated that an injured third party may institute proceedings. A standardization program improperly arrived at may have grave economic consequences on competing producers. Every effort should be made to avoid harming the small or marginal producer; for example, attempt to avoid adopting a standard that would require small producers to engage in extensive retooling or other alterations they cannot afford. Also, avoid standardizing on use of raw material of limited availability to some members of an industry. The same might be said of a product that involves the use of a patent or technical information not available to everyone in the industry. If third parties are injured because of failure to take these considerations into account, I believe they have a remedy; namely, a suit under the provisions of the antitrust laws that empower private persons to institute damage actions and to recover threefold their damages.

Conclusion

I do not believe the Justice Department, either present or past, has been hostile toward or unfair to legal standardization programs. We realize that standardization has been and can be an important factor in industrial progress, just as such standards as languages and customs have contributed to social progress. And industrial progress, unhampered by artificial limitations, is entirely consistent with the basic philosophy of the antitrust laws. Such progress is *not* furthered, however, by standardization programs which seek to restrain producers from competitively attempting to excel one another in the development and improvement of their products; or which are utilized to facilitate price fixing; or which are part of an otherwise illegal scheme. I think the Department would be derelict if it were not hostile toward these.

What Is Your Question?

The questions below were addressed to Willis S. MacLeod at the session on Relationships of Industry Standards and Specifications to Those of Government, during the Sixth National Conference on Standards. Mr MacLeod is Director of the Standardization Division, Federal Supply Service, General Services Administration. The questions have been answered by Mr MacLeod's staff. Other questions and answers in this series will be published in the February issue.

Are there any plans to eliminate duplication of specification by canceling ASTM and superseding by Federal—or vice versa?

There are no plans to cancel ASTM and supersede them by Federals. We are adopting ASTM Test Methods when they are the same as Federal by way of cross-reference in Federal Standard Test Methods Indexes and Specifications. It is hoped that ASTM will convert some existing Federals to ASTM where there is no existing ASTM.

How are obsolete Federal Specifications revised to meet the requirements of the Government?

Periodically, at approximately one year intervals, dependent on the commodity and type involved, specifications are reviewed to determine whether changes should be made because of new Government requirements or because of technological developments in design and methods of manufacture.

When difficulty is experienced in purchase, or when familiarity with a commodity and production methods indicates that a specification revision is necessary, the latest producers' catalogs and data on known technical changes are secured and reviewed to form a basis for changes in the existing specification. A draft of a proposed revision containing changes deemed advisable, is prepared and distributed first to industry then to Government for comment. Comments received are resolved into a new draft and issued as a revised Federal Specification.

Commercial Standards are issued by the Department of Commerce. How do these standards relate to GSA Standards? How are they (CS) utilized by GSA?

Commercial Standards consist of a limitation of sizes and certain design features, voluntarily entered into by the majority of producers for various commodities. These standards are negotiated and published by the U.S. Department of Commerce. Commercial Standards differ from GSA Standards in that they are primarily sponsored by industry, to reduce production costs and standardize industry. Whereas, GSA Standards are intended to reduce the variety of items available to federal users.

When available and current, Commercial Standards are used to the fullest extent possible in establishing classifications of the various types, classes, styles, sizes, etc, of tools and equipment for inclusion in Federal Specifications.

Do you plan to develop a Federal Specification for every item purchased by GSA? What is your policy on make and model standardization?

We do not plan to develop a specification for every item. Example: Office Machines. Neither do we plan to standardize on any particular make or model of office machine.

AMERICAN STANDARDS

Status as of

ACOUSTICS

In Standards Board—

Ultrasonic Therapeutic Equipment, Z24.18
Sponsor: Acoustical Society of America

BUILDING

American Standard Approved—

Open Joist Steel Construction, Specifications for, A87.1-1955 (Revision of A87.1-1947)
Sponsor: Steel Joist Institute

In Board of Review—

Gypsum Lath, Specifications for, Revision of ASTM C37-50; ASA A67.1-1951

Gypsum Sheathing Board, Specifications for, Revision of ASTM C79-52; ASA A68.1-1953

Testing Gypsum and Gypsum Products, Methods of, Revision of ASTM C26-52; ASA A70.1-1953

Gypsum Partition Tile or Block, Specifications for, Revision of ASTM C52-41; ASA A105.1-1954
Sponsor: American Society for Testing Materials

Determining Areas in Office Buildings (Other than Government Buildings), Z65.1
Sponsors: U. S. Department of Health, Education, and Welfare; National Association of Building Owners and Managers

Standard Submitted—

Standard Types of Building Construction, NFPA 220; ASA A110.1
Sponsor: National Fire Protection Association

CONSUMER GOODS

New Project Requested—

Performance Requirements for Cleaning Supplies
Requested by: American Hotel Association

ELECTRICAL

American Standards Published—

Conditioning Plastics and Electrical Insulating Materials for Testing, Methods of, ASTM D 618-54; ASA C59.28-1955 $.30
Sponsor: American Society for Testing Materials

Electrical Indicating Instruments, C39.1-1955 (Revision of C39.1-1951) $2.00
Sponsor: Electrical Standards Board

American Standards Approved—

Single and Heavy Vinyl Acetal Coated Round Copper Magnet Wire, NEMA MW15-1955; ASA C9.5-1955

Heavy Vinyl Acetal Coated Rectangular and Square Copper Magnet Wire NEMA MW18-1955; ASA C9.6-1955

Double-Paper Single Cotton-Covered Rectangular and Square Copper Magnet Wire, NEMA MW32-1955; ASA C9.7-1955
Sponsor: National Electrical Manufacturers Association

In Standards Board—

Measurement of Aspect Ratio and Geometric Distortion of Television Cameras and Picture Monitors, C16.23

Terms for Audio Techniques, Definitions of, 54 IRE 3.S1; ASA C16.24

Television Signal Measurement Terms, Definitions of, 55 IRE 23.S1; ASA C16.27
Sponsor: Institute of Radio Engineers

Insulators for Electric Power Lines, C29
Sponsor: Electrical Standards Board

Terms of Electron Tubes, Definitions of, C60.9

Terms of Magnetrons, Definitions of, C60.10

Definitions of Semiconductor Terms, 54 IRE 7.S2; ASA C60.14
Sponsor: Joint Electron Tube Engineering Council

GRAPHICS

American Standard Published—

Graphical Symbols for Plumbing, Y32.4-1955 (Revision of Z32.2.2-1949) $1.00
Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

HIGHWAY TRAFFIC

In Board of Review—

Railroad Highway Grade Crossing Protection, D8 (Revision of D8.1-1951)
Sponsor: Association of American Railroads

MATERIALS AND TESTING

American Standards Approved—

Method of Testing Refractory Brick Under Load at High Temperatures, ASTM C16-49; ASA A111.1-1955

Methods of Chemical Analysis of Refractory Materials, ASTM C-18-52; ASA A111.2-1955

Methods of Test for Apparent Porosity, Water Absorption, Apparent Specific Gravity, and Bulk Density of Burned Refractory Brick, ASTM C20-46; ASA A111.3-1955

Method of Test for Pyrometric Cone Equivalent (P.C.E.) of Refractory Materials, ASTM C24-46; ASA A111.4-1955

Classification of Fireclay Refractories, ASTM C27-41; ASA A111.5-1955

Method for Basic Procedure in Panel Spalling Test for Refractory Brick, ASTM C38-52; ASA A111.6-1955

Specifications for Refractories for Malleable Iron Furnaces with Removable Bungs, and for Annealing Ovens, ASTM C63-51; ASA A111.7-1955

Specifications for Refractories for Heavy Duty Stationary Boiler Service, ASTM C64-51; ASA A111.8-1955

Definitions of Terms Relating to Refractories, ASTM C71-55; ASA A111.91 1955

Methods of Test for Sieve Analysis and Water Content of Refractory Materials, ASTM C92-46; ASA A111.10-1955

Methods of Test for Crushing Strength and Modulus of Rupture of Insulating Fire Brick at Room Temperature, ASTM C93-54; ASA A111.11-1955

Specifications for Ground Fire Clay as a Mortar for Laying-Up Fireclay Brick, ASTM C105-47; ASA A111.12-1955

Specifications for Refractories for Incinerators, ASTM C106-51; ASA A111.13-1955

Method of Panel Spalling Test for High Duty Fireclay Brick, ASTM C107-52; ASA A111.14-1955

Method of Test for Reheat Change of Refractory Brick, ASTM C113-46; ASA A111.15-1955

Method of Panel Spalling Test for Super Duty Fireclay Brick, ASTM C122-52; ASA A111.16-1955

Methods of Test for Cold Crushing Strength and Modulus of Rupture of Refractory Brick and Shapes, ASTM C133-55; ASA A111.17-1955

Methods of Test for Size and Bulk Density of Refractory Brick, ASTM C134-41; ASA A111.18-1955

Method of Test for True Specific Gravity of Refractory Materials, ASTM C135-47; ASA A111.19-1955

Specifications for Refractories for Moderate Duty Stationary Boiler Service, ASTM C153-51; ASA A111.20-1955

Method of Test for Warpage of Refractory Brick and Tile, ASTM C154-41; ASA A111.21-1955

Classification of Insulating Fire Brick, ASTM C155-47; ASA A111.22-1955

Specifications for Fireclay Plastic Refractories for Boiler and Incinerator Services, ASTM C176-47; ASA A111.23-1955

Specifications for Air-Setting Refractory Mortar (Wet Type) for Boiler and Incinerator Services, ASTM C178-47; ASA A111.24-1955

Method of Test for Combined Drying and Firing Shrinkage of Fireclay Plastic Refractories, ASTM C179-46; ASA A111.25-1955

Method of Panel Spalling Test for Fireclay Plastic Refractories, ASTM C180-52; ASA A111.26-1955

Method of Test for Workability Index of Fireclay Plastic Refractories, ASTM C181-47; ASA A111.27-1955

Method of Test for Thermal Conductivity of Insulating Fire Brick, ASTM C182-47; ASA A111.28-1955

Method of Test for Bonding Strength of Air-Setting Refractory Mortar (Wet

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Type), ASTM C198-47; ASA A111.29-1955

Method of Test for Refractoriness of Air Setting Refractory Mortar (Wet Type), ASTM C199-47; ASA A111.30-1955

Method of Test for Thermal Conductivity of Refractories, ASTM C201-47; ASA A111.31-1955

Method of Test for Thermal Conductivity of Fireclay Refractories, ASTM C202-47; ASA A111.32-1955

Method of Test for Reheat Change of Insulating Fire Brick, ASTM C210-46; ASA A111.33-1955

Specifications for Fireclay-Base Castable Refractories for Boiler Furnaces and Incinerators, ASTM C213-55; ASA A111.34-1955

Method of Test for Disintegration of Fireclay Refractories in an Atmosphere of Carbon Monoxide, ASTM C288-54; ASA A111.35-1955

Classification of Single- and Double-Screened Ground Refractory Materials, ASTM C316-55; ASA A111.36-1955
Sponsor: American Society for Testing Materials

MECHANICAL

American Standard Approved—

Cast-Brass Solder-Joint Drainage Fittings, B16.23-1955 (Revision of B16.23-1953)
Sponsors: American Society of Mechanical Engineers; Manufacturers Standardization Society of the Valve and Fittings Industry; Heating, Piping, and Air Conditioning Contractors National Association

Reaffirmation Approved—

Reamers, B5.14-1949 R 1955
Sponsors: American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

Standard Submitted—

Marking of Diamond Wheel Types
Sponsor: Grinding Wheel Institute

PETROLEUM PRODUCTS AND LUBRICANTS

American Standards Approved—

Test for Rust-Preventing Characteristics of Steam-Turbine Oil in the Presence of Water, ASTM D665-54; ASA Z11.85-1955

Test for Aromatic Hydrocarbons in Olefin-Free Gasolines by Silica Gel Adsorption, ASTM D936-55; ASA Z11.86-1955

Test for Oxidation Characteristics of Inhibited Steam-Turbine Oils, ASTM D943-54; ASA Z11.87-1955

Test for Measurement of Freezing Points of High-Purity Compounds for Evaluation of Purity, ASTM D1015-55; ASA Z11.88-1955

Test for Determination of Purity from Freezing Points, ASTM D1016-55; ASA Z11.89-1955

Test for Oxygen in Butadiene Vapors (Manganous Hydroxide Method), ASTM D1021-55; ASA Z11.90-1955

Test for Sampling Liquefied Petroleum Gases, ASTM D1265-55; ASA Z11.91-1955

Test for Vapor Pressure of Liquefied Petroleum Gases, ASTM D1267-55; ASA Z11.92-1955

Test for Saponification Number of Petroleum Products by Color-Indicator Titration, ASTM D94-55; ASA Z11.20-1955 (Revision of ASTM D94-52T; ASA Z11.20-1952)

Test for API Gravity of Petroleum and Its Products, Hydrometer Method, ASTM D287-55; ASA Z11.31-1955 Revision of ASTM D287-52; ASA Z11.31-1952)

Test for Vapor Pressure of Petroleum Products (Reid Method), ASTM D323-55; ASA Z11.44-1955 (Revision of ASTM D323-52; ASA Z11.44-1952)

Test for Distillation of Plant Spray Oils, ASTM D447-55; ASA Z11.43-1955 Revision of ASTM D447-52T; ASA Z11.43-1952)

Test for Oxygen Stability of Gasoline (Induction Period Method), ASTM D525-55; ASA Z11.63-1955) (Revision of ASTM D525-49; ASA Z11.63-1949)

Test for Oil Content of Petroleum Waxes, ASTM D721-55; ASA Z11.52-1955 (Revision of ASTM D721-53T; ASA Z11.52-1953)

Test for Sulfated Residue from New Lubricating Oils, ASTM D874-55; ASA Z11.68-1955 (Revision of ASTM D874-51; ASA Z11.68-1951)

Test for Knock Characteristics of Motor Fuels by Research Method, ASTM D908-55; ASA Z11.69-1955 (Revision of ASTM D908-53; ASA Z11.69-1953)

Test for Density of Hydrocarbon Liquids by the Pycnometer, ASTM D951-55; ASA Z11.62-1955 (Revision of ASTM D941-49; ASA Z11.62-1949)

Test for Olefinic Plus Aromatic Hydrocarbons in Petroleum Distillates, ASTM D1019-55T; ASA Z11.71-1955 (Revision of ASTM D1019-51; ASA Z11.71-1951)

Test for Apparent Viscosity of Lubricating Greases, ASTM D1092-55; ASA Z11.72-1955 (Revision of ASTM D1092-51; ASA Z11.72-1951)

ASTM - IP Petroleum Measurement Tables, ASTM D1250-55; ASA Z11.83-1955 (Revision of ASTM D1250-53; ASA Z11.83-1953)

Test for Specific Gravity of Petroleum and Its Products (Hydrometer Method), ASTM D1298-55; ASA Z11.84-1955 (Revision of ASTM D1298-54; ASA Z11.84-1955)
Sponsor: American Society for Testing Materials

PHOTOGRAPHY

American Standard Approved—

Screen Brightness of 16mm Laboratory Review Rooms, PH22.100-1955
Sponsor: Society of Motion Picture and Television Engineers

In Board of Review—

Specifications for 35-Millimeter Slidefilm Projection Rolls, PH1.24-1955 (Revision of Z38.3.3-1946)

In Standards Board—

Dimensions for Medical X-ray Sheet Film (Inch and Centimeter Sizes), PH1.17 (Revision of PH1.17-1953)

Dimensions for Professional Portrait and Commercial Sheet Film (Inch and Centimeter Sizes), PH1.18 (Revision of PH1.18-1953 and combination with Z38.1.29-1949)

Dimensions for 70-Millimeter Unperforated and Perforated Film for Cameras Other Than Motion Picture Cameras, PH1.20 (Revision of Z38.1.3-1948)

Dimensions for Amateur Roll Film, Spool, and Backing Paper No. 828, PH1.21a (Supplement to Z38.1.7-1950)

Specifications for Safety Photographic Film, PH1.25 (Revision of Z38.3.1-1943)

Method for the Sensitometry of Industrial X-ray Films for Energies up to 2 Million Electron Volts, PH2.8

Method for the Sensitometry of Medical X-ray Films, PH2.9

Focal Length of Lenses: Markings, PH3.13 (Revision of Z38.4.4-1942)

Photographic Thermometers, PH4.7 (Revision of Z38.8.11-1948)

Photographic Graduates, PH4.9 (Revision of Z38.8.12-1948)

X-ray Sheet Film Hangers (Clip-Type), PH4.18 (Revision of Z38.8.23-1949)

Internal Dimensions for Deep Tanks for Manual Processing of Amateur Roll Film, PH4.19 (Revision of Z38.8.8-1946)

Channel-Type Multiple Photographic Hangers (Plates and Sheet Film), PH4.22

Specification for Photographic Grade Sodium Citrate, PH4.179
Sponsor: Photographic Standards Board

SAFETY

In Board of Review—

Prevention of Dust Explosions in Flour and Feed Mills, Code for, Z12.3 (Revision of Z12.3-1953)

Prevention of Dust Explosions in Terminal Grain Elevators, Code for, Z12.4 (Revision of Z12.4-1953)

Prevention of Dust Ignitions in Country Grain Elevators, Code for, Z12.13 (Revision of Z12.13-1953)
Sponsor: National Fire Protection Association

Project Being Considered—

Project on Parking Garage Equipment
Proposed Sponsor: American Society of Mechanical Engineers

Aprons, Machinists or Toolmakers (Loom Finished) L24.4.1-1955

Coveralls, Shop Coats, Overalls, Work Pants, and Dungarees (Light Duty), Stock, Indigo, or Yarn Dyed, L24.4.2-1955

Coveralls, Shop Coats, Overalls, Work Pants, and Dungarees (Heavy Duty), Stock, Indigo, or Yarn Dyed, L24.4.3-1955

Coveralls, Shop Coats, Overalls, and Dungarees (Light Duty), L24.4.4-1955

Coveralls, Shop Coats, Overalls, and Dungarees, (Heavy Duty), L24.4.5-1955

Work Shirts (Light Duty), L24.4.6-1955

Work Shirts (Light Duty), Stock, Indigo, or Yarn Dyed, L24.4.7-1955

Work Shirts (Heavy Duty), L24.4.8-1955

Work Shirts (Heavy Duty), Stock, Indigo, or Yarn Dyed, L24.4.9-1955

Work Pants (Light Duty), L24.4.10-1955

Work Pants (Heavy Duty), L24.4.11-1955

Proposed Procedure for Labeling, Tags and Certification, L24.5.1-1955
Sponsor: American Hotel Association

SOAP AND DETERGENTS

Standards Submitted—

Specifications for Sodium Metasilicate, ASTM D537-1955 (Revision of ASTM D537-41; ASA K60.18-1948)

Specifications for Trisodium Phosphate, ASTM D538-55 (Revision of ASTM D538-44, ASA K60.12-1948)

Specifications for Soda Ash, ASTM D458-55 (Revision of ASTM D458-39; ASA K60.11-1948)

TEXTILES

American Standards Approved—

Requirements for fabrics used for:—
Awnings and Canopies, L24.1.1-1955
Decorative Bedspreads, L24.1.2-1955
Glass Fiber Window Curtains, L24.1.3-1955
Window Curtain Fabrics (Sash-casement) (Excluding Glass Fiber), L24.1.4-1955
Woven Drapery Fabrics (Excluding Glass Fiber), L24.1.5-1955
Woven Slip Cover Fabrics, L24.1.6-1955
Woven Uphlostery Fabrics, L24.1.7-1955
Bath Mats, L24.2.1-1955
Dish Towels, L24.2.2-1955
Glass Towels, L24.2.3-1955
Huck Towels, L24.2.4-1955
Terry Cloth Towels, (Single and Double), L24.2.5-1955
Printed Table Napery, L24.2.6-1955
Table Napery (Damask Type), L24.2.7-1955
Woven Bedspreads (Excluding L22.3.8-1952), L24.2.8-1955
Woven Blankets, L24.2.9-1955
Woven Shower Curtains, L24.2.10-1955
Table Napery (Other than Damask-White or Dyed), L24.2.11-1955
Tailored Uniforms Intermediate (Year Round Suiting), L24.3.1-1955
Tailored Uniforms Heavy Weight (Industrial Suitings), L24.3.2-1955
Tailored Uniforms Light Weight (Tropical Suitings), L24.3.3-1955
Overcoats, L24.3.4-1955
All Cotton and Linen Washable Uniforms for Men and Women (Light Duty), L24.3.5-1955
All Cotton and Linen Washable Uniforms for Men and Women (Heavy Duty), L24.3.6-1955
Uniforms for Men and Women, Manmade Fibers, Silk and Blends (Excluding L22.1.4-1952), L24.3.7-1955

WHAT'S NEW ON AMERICAN STANDARDS PROJECTS

Transformers, Regulators, and Reactors, C57—

Sponsor: Electrical Standards Board

An up-to-date guide for determining the effect of loading and temperature on the life expectancy of oil-immersed step-voltage and induction-voltage regulators has just been published. This is one in a series of standards and appendices on transformers now being prepared. The recently published Guide is an appendix to the American Standard specifications and test code for oil-immersed step-voltage and induction-voltage regulators, one of the C57 standards now being revised.

As indicated in the title, the Guide gives information concerning the performance of regulators under different temperature and load conditions.

A regulator is rated according to the load which it can deliver continuously without exceeding a given temperature rise. This temperature rise is measured under prescribed test conditions. The experience of industry regarding the effect of operating temperature on insulation life and regarding the ambient temperatures that exist throughout the life of a regulator is taken into consideration. The Guide warns that loading a regulator must also be a matter of sound judgment based on experience, since the relation between the life expectancy of insulation as indicated by laboratory tests and the actual life of insulation in a regulator is largely theoretical.

Specifically, the Guide gives information that can be used as a basis for determining what conditions and loads will assure normal life of the insulation and hence of the regulator. Tables outline the daily overloads that can be given the regulators without affecting the normal life of the insulation; and also the short-time loadings and the moderate sacrifice of life expectancy that will result.

Graphs show short-time loads above rating that use up different amounts of life expectancy and give data for calculating transient heating of oil-immersed transformers.

The committee is continually investigating the effects of temperature on insulation life and new findings may affect future revisions of this Guide, the committee explains.

Copies of the Guide for Loading Oil-Immersed Step-Voltage and Induction-Voltage Regulators, Appendix C57.95, are now available at $1.00 each.

Institutional Textiles, L24—

Sponsor: The American Hotel Association

Commenting on approval of 36 American Standards outlining minimum requirements for textiles used by institutions, Clifford Gilliam, chairman of Sectional Committee L24, commented: "These standards, the first national standards for performance of institutional fabrics and products, will be of great assistance to both wholesale distributors of textiles and buyers for hotels, restaurants, educational and other institutions."

The committee had the cooperation of mills and converters and their technical advisors in laying the foundation for minimum requirements for the various end-uses, Mr Gilliam explained. Mr Gilliam is chairman of the Research Committee of the American Hotel Association and is general manager of The Inn, Buck Hill Falls, Pennsylvania.

The new American Standards cover institutional furnishings such as awnings and canopies, bedspreads, window curtains, and slip

cover and upholstery fabrics; textiles for utility use, such as bath mats, dish towels, blankets, and shower curtains; uniforms; and work clothes. A proposed procedure for labeling textiles that meet the requirements of the standards was also approved.

The standards provide a set of test methods to establish the minimum performance requirements. They are purely functional and do not in any way restrict fashions or styles.

Paper and Pulp Mills, Pl—

Sponsors: American Paper and Pulp Association; National Safety Council

A proposed revision of the 1936 edition of the American Standard Safety Code for Paper and Pulp Mills has been sent to letter ballot of the sectional committee.

Petroleum Products and Lubricants, Z11—

Sponsor: American Society for Testing Materials

The National Bureau of Standards is abandoning its use of the master Saybolt viscometers as standards for the calibration of Saybolt Universal and Saybolt Furol viscometers, effective June 30, 1956. This is being done because standard conversion tables and factors for the conversion of kinematic viscosities to Saybolt viscosities make it possible to determine kinematic viscosities more precisely. These tables were prepared by a committee of the American Society for Testing Materials with the cooperation of the American Petroleum Institute and have been approved as American Standard. They are American Standard Method for Conversion of Kinematic Viscosity to Saybolt Universal Viscosity, ASTM D 446-53; API 534-53; ASA Z11.46-1953, and American Standard Method for Conversion of Kinematic Viscosity to Saybolt Furol Viscosity, ASTM D 666-53; API 548-53; ASA Z11.53-1953.

The Director of the National Bureau of Standards asks that any objections to this proposed action be brought promptly to his attention.

STANDARDS OUTLOOK

by Leo B. Moore

Selling Standards

Standards engineers have some problems in their operations that seem to them difficult of solution, peculiar to standards, and of constant concern. One problem in this category is the difficulty of selling standards to the rest of the organization. Standards are not to be forced on the company, but are generally to be voluntary in their acceptance and use. To gain this voluntary agreement, standards engineers ask for and encourage the contributions of the potential user and provide every special service and help in order to make the standard understood and practical. But, many times, perfectly good standards are not used because they are not accepted.

How do other functions of the business fare in this matter of acceptance of their endeavors? Methods engineers make jigs that foremen don't use; personnel men develop rating forms that department heads forget. The cost department draws off figures that everyone ignores; production control sets up a schedule that no one seems to abide by. There are throughout the average company many examples of what might be termed lack of acceptance. It is agreed that the obvious answer of having the boss intervene is not the answer to the problem of selling standards.

There is one department—the marketing group—that has a like problem. They have it in connection with new products. Like the standards department with new standards, marketing people through surveys and other market information try to get some estimate of the acceptability of a proposed product. They also make some judgment of the market in terms of converting acceptability into willingness to buy. Standards engineers call this—use of the standard.

How does marketing succeed in this area?

If it is any consolation to standards engineers, marketing does not do as well as it would like to. When it fails with a new product the failure is very expensive and apparent. There is little compensation in the answer that another product is on the drawing boards. Pointing to similar failures in other companies does not erase the stigma. Like standards engineers, marketing men would like to know more about gaining acceptance.

Here is an opportunity for two groups with a community of interest. It is certainly true that nothing but good could come from standards seeking aid from the company marketing group. For although marketing would like to increase their successes, they have spent many hours on the problem and have some sense of its attack. They know that customers do not always buy on a rational basis. They know there must be some measure of satisfaction anticipated by customers before they accept what is offered. And they know the methods used to make the potential customer unhappy with his present condition and anxious to change it. They should be able to suggest some ways of applying these ideas to the selling of standards.

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Mr Moore is Assistant Professor of Industrial Management at Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

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